



Building and construction
How companies survive
the industry



Perfect vision
The surgeon and
the eye



Aerospace
Mergers help to
dull the pain



Telecommunications
The last picture show

FINANCIAL TIMES

Europe's Business Newspaper FRIDAY SEPTEMBER 2 1994 D8523A

Toyota signals plan to build vehicles in China

Toyota yesterday announced it would set up a support centre in China for component suppliers - the strongest hint yet that Japan's biggest car-maker is interested in making vehicles in China. Toyota president Tatsuro Toyota will discuss the plan for the centre with government officials and local vehicle makers during his current visit to China. Page 16

US-Cuba talks 'serious'

The US and Cuba held 'serious, professional and businesslike' talks about how to halt the uncontrolled exodus of Cuban boat people, the US state department said. Page 3

Israel widens links

Israel and Morocco announced they would establish diplomatic links by opening liaison offices in each other's countries. Morocco also announced it would open a liaison bureau in the Palestinian self-rule enclave of Gaza. Page 4

Gaddafi's salute marks 25 years in power

Libyan leader Muammar Gaddafi (left) waved to the Tripoli crowds as tanks rolled past to mark 25 years since he overthrew King Mohammed Idris in a coup and seized power. The show of military might comes at a time when Libya is subject to UN sanctions imposed for its refusal to hand over two men suspected of involvement in the 1988 bombing of an airliner over Lockerbie, Scotland. Page 1

Russia lays down advertising law

Russian government approved a draft law designed to curb saturation TV advertising like that used by failed financial company MMM, which swamped Russian screens with up to five commercials an hour. Page 2

Scott report delayed

Lord Justice Richard Scott's final report into Britain's 'arms-for-Iraq' inquiry will not be issued until next year and the judge is to question more witnesses from the intelligence services, his office said. Page 17

Two die in UK fighter crash

The two crew of a Royal Air Force Tornado fighter died when their aircraft crashed near Inverary in central Scotland. Their bodies were found in wreckage. Page 1

Broker takes new names

Hoare Govett, the London stockbroker firm acquired two years ago by Dutch bank ABN-Amro, is to take the name ABN-Amro Hoare Govett. Page 17

Basf, German chemicals group, is trying to boost its Knoll pharmaceuticals division by diversifying into non-patented generic drugs in the German market via a new distribution and marketing company, BASF Generics. Page 17

ENI interim down

Eni interim down: French oil group Eni Aquitaine blamed lower crude prices for a 10 per cent drop to FF1.2bn (\$222m) in its first-half net profits. Page 17; Evolutionary, not revolutionary, approach at ENI, Page 20

Asbestos claims hit T&N

The former Turner & Newall - once Britain's largest asbestos supplier - had to make record compensation personal injury payments of £22.1m (\$34.25m) in the first half. But pre-tax profits at the engineering and motor components group rose from £39.4m to £61m. Page 23

Reckitt & Colman shares fell 25p to 627p

when the household products and toiletries group reported interim taxable profits weaker than expected at £133.3m (\$191m). Page 17; Lex, Page 16

Deportee's death probed

An investigation was launched in Germany into the death of a Nigerian who died at Frankfurt airport. The man had been tied up and sedated by German officials who were trying to deport him. Page 1

Quake rocks California

At least one strong earthquake rocked an area centred off the north coast of California. The quake, measuring 6.9 on the Richter scale, caused no damage but was felt as far south as Fresno in central California. Page 1

British team not withdrawn

The British Athletic Federation said it would not withdraw its women's team from next week's world cup because such a move would prejudice runner Diane Modahl's hearing after her positive drug test. The International Amateur Athletic Federation could overturn the BAF decision. Page 1

Brussels may delay EU media ownership rules

By Lionel Barber in Brussels

The European Commission is considering delaying proposals to harmonise rules on media ownership in the EU, amid concern about a backlash among member states worried about intrusive Brussels regulation. A decision to delay would be a setback for Mr Vanni d'Archirafi, the Italian internal market commissioner, who would like to introduce a new EU directive at the end of this year or early 1995. But majority sentiment among his Commission colleagues seems in favour of a 'softly softly' approach. Under a compromise solution that

emerged in late July at a meeting of chiefs of staff of the 17 commissioners, the Commission will be asked this month to consider supporting an 'initiative' on media ownership. 'We think we need to do something, but we don't want to prejudice the question of legislation,' said one official. 'This is a very important, very touchy subject.' Mr d'Archirafi argues that investment in Europe's single market is being held back by the patchwork of media ownership rules. He believes that an 'initiative' - however it is dressed up - must lead to an EU directive if it is to be effective.

The Italian commissioner has also argued, with some success, that the EU must position itself quickly to exploit advances in broadcasting technology which are paving the way for pay television, video on demand, and the proliferation of specialised TV channels. Germany's Martin Bangemann, the industry commissioner, supports this view. But Sir Leon Brittan, chief EU trade negotiator, has raised questions about the need for EU-wide legislation, fearing it could infringe the principle of subsidiarity - devolving decision-making to the lowest appropriate national or regional level. Mr Karel Van Miert, the Belgian com-

petition policy commissioner, is worried that an EU directive lifting restrictions on media ownership could threaten the independence of Belgian media - a delicate balance between Flemish and Franco-phone interests traditionally wary of French predators across the border. The problems created by differences in EU media ownership surfaced during a consultation exercise which the Commission conducted last year among 70 companies and industry organisations. Many came out in favour of Brussels-led reform, with some expressing concern that outdated rules on cross-media ownership could deny them the opportu-

nity to exploit future electronic media. For example, in the Netherlands, newspaper publishers with a market share of more than 25 per cent cannot own a television channel, but in Italy the threshold is 16 per cent. In the UK, a blanket ban exists on newspapers owning more than 20 per cent of terrestrial channels, but there is no limit on ownership of satellite channels. Brussels officials said yesterday the Commission faces a tricky balancing act as it ponders how to proceed. On the one hand, it needs to maximise the potential of the single market, but on the

Continued on Page 16



Goodbye to Berlin: General Matvei Burlakov carries away a Russian flag yesterday as he is about to leave the military airport at Sprenburg, 160 miles south of the city. Gen Burlakov was the commander of the western group of the Russian army based in former East Germany. Yesterday was the day on which the last Russian troops left Germany. Picture Associated Press

US and N Korea to meet in Pyongyang

By John Burton in Seoul

US and North Korean officials will meet in Pyongyang next week to discuss the opening of liaison offices in the two countries. Such a move would be a significant step towards establishing diplomatic relations. Simultaneously, the two sides will meet in Berlin to discuss a US offer of light-water reactors, the supply of interim energy sources to North Korea while these reactors are being constructed, and the disposal of North Korea's spent fuel rods, which are capable of producing enough plutonium for five nuclear bombs.

The meetings, which will begin on September 10, are the result of last month's US-North Korean framework agreement. Under the accord, Pyongyang promised to accept full international nuclear inspections in return for improved ties with Washington and the supply of safe reactors to replace its dangerous graphite ones. The talks confirm North Korea's willingness to abide by the agreement, while they also offer evidence that the succession of power in Pyongyang by Mr Kim Jong-il is proceeding smoothly after the death of his father, President Kim Il-sung, in July. Officials in Seoul said it was unlikely that the US negotiators would have been allowed to go to Pyongyang if a serious power struggle was under way in North Korea, as has been rumoured in recent days.

Continued on Page 16

Rowland survives battle over Lonrho joint chief post

By Roland Rudd and Robert Peston in London

Mr Tiny Rowland won a last-minute victory yesterday over Mr Dieter Bock, his fellow chief executive, who had planned to strip him of his executive duties. The German financier, with 15.8 per cent of the shares, had been confident that the group's 14 directors would remove the 76-year-old Mr Rowland as joint chief executive after the disclosure that he was costing Lonrho £5.5m a year in salary, expenses and other charges under his control. But Lonrho's three non-executive directors were instrumental yesterday in preventing attempts to remove Mr Rowland as joint chief executive. One explained that they feared such an attempt could turn into a 'damaging confrontation'.

Instead of questioning whether Mr Rowland should continue in his post, the board issued a statement saying that speculation regarding his role in the company 'was totally unfounded'. However, it also made clear that the remuneration committee, set up by Mr Bock and chaired by Mr Peter Harper, would review expense levels at head office. The statement also said the review of all directors' contracts, remuneration and expenses was part of an 'ongoing process of change within the group'. Mr Rowland knew he had won an important victory before the start of the meeting when he told waiting journalists: 'I am too young to retire.'

Mr Bock's supporters were putting a brave face on events, making clear that the public disclosure of Mr Rowland's expenses had made it harder for him to remain in his post in the medium term. Some directors also remain concerned that the company sold a recently completed film about the Lockerbie bombing to an Egyptian company linked to Libya, in possible contravention of United Nations sanctions. But one Lonrho employee questioned Mr Bock's timing in trying to remove his joint chief executive. Mr Rowland's two most prominent allies on the board retired in the autumn: Mr René Leclercq, the chairman, goes at the end of October and Mr Robert Dmolep retires at the end of the month. Mr Bock might have been in a stronger position had he waited. But he is said to believe that his timing was dictated by the Lockerbie film disclosure. With the disagreement between the two chief executives out in the open, some analysts warned that a question mark over the group's strategy would remain until it became clear who had won the power battle. Mr Bock may now have to wait until the end of next year, when he can exercise a call option on Mr Rowland's remaining 6.5 per cent stake. He has made no secret of his desire to remove Mr Rowland, who he believes has been frustrating his attempts to reorganise Lonrho's assets.

Editorial Comment, Page 15
A 'civilised option', Page 18

Debate over IRA intentions continues

UK edges closer to face-to-face talks with Sinn Féin

By David Owen in London, Tim Cooney in Dublin and George Graham in Washington

The prospect of face-to-face meetings by the end of the year between Sinn Féin and the British government moved closer yesterday, as Northern Ireland passed the first day of the IRA ceasefire with a mixture of wariness and jubilation. As the debate continued over whether the IRA had declared a permanent end to its armed campaign, Downing Street acknowledged that any decision would be based on the evidence shown by republican leaders that they were 'moving in our direction'. But it emphasised that the three-month countdown to talks with the IRA's political wing would not begin until the organisation's intentions were 'utterly clear'.

Suspensions of a secret deal between London and the IRA were again aroused by the transfer of four Republican prisoners from the mainland to jails in Ulster. Downing Street said that the transfer - involving two of the men sentenced for involvement in the Brighton bombing in 1984 - had 'absolutely no connection' with the peace process and was a routine operation arranged more than a month ago.

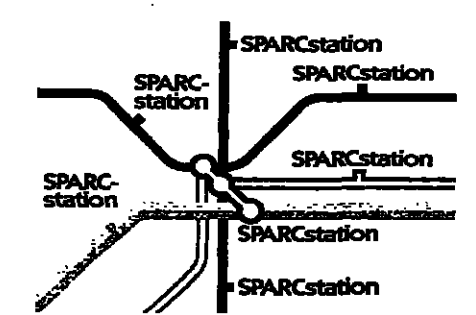
But the move was at once attacked by Lord Tebbit, the former Conservative cabinet minister, who was badly injured in the blast. He said it was either 'an early reward for the IRA or crass political incompetence'. Mr John Major, the prime minister, was said to be 'livid' that transfer was authorised by Prison Service officials without reference to ministers. In Dublin, Mr Albert Reynolds, the Irish prime minister, who does not share Downing Street's caution, used a state-of-the-nation speech to urge all parties to show imagination and flexibility, saying nobody should diminish the potential of the ceasefire 'by trying to interpret it as anything other than what it is'. Mr Dick Spring, the Irish foreign minister, who plans to meet President Bill Clinton in Massachusetts today, said he hoped any differences of interpretation between London and Dublin would be resolved 'in a matter of days'. In Washington, little tangible progress was evident in putting flesh on the US promise of support to the peace process.

In the past President Bill Clinton has expressed interest in a visit to Ireland. But no plans are presently being made. As republican leaders responded to London's demands for the IRA to declare openly a permanent end to its armed campaign, Mr Martin McGuinness, a member of Sinn Féin's governing executive, said the organisation was committed to 'a complete cessation of military operations under all circumstances'. But he said misgivings about the IRA's omission of the word 'permanent' were 'rather silly' and amounted to 'a bit of a storm in a teacup'. He expressed confidence that the matter would be resolved 'within days'. 'As far as I am concerned, Sinn Féin will be involved in discussions with the Dublin government and the British government in a short period of time.' His comments followed the publication of an article by Mr Gerry Adams in the Irish Times in which Mr Adams said: 'Albert Reynolds, Dick Spring, John Hume and others have responded positively and correctly to the IRA announcement.'

Business hopes for 30,000 jobs. Page 9

MORSE

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NEWS: EUROPE

Militant Serbs want arms ban lifted

By Laura Silber in Belgrade and Bruce Clark in London

US threats to lift the arms embargo against Bosnia's Muslim-led government have produced an unexpected reaction: the most militant Serbs say they would welcome the move, while some prominent Muslims view the prospect with alarm.

This paradoxical response reflects the headline Serbs' confidence that they could make further gains in the event of an all-out war, and Muslim fears that their side, albeit growing in strength, is not ready for an escalating conflict.

President Bill Clinton has told Congress, where the ban on arms sales to Bosnia is unpopular, that he will formally propose lifting the embargo unless the Bosnian Serbs accept the current peace plan by October 15.

Militant Bosnian Serbs, who have resisted pressure from their kinsmen in Belgrade to accept the plan, are confident the US move would force all Serbs to bury their internal divisions and prosecute the war with renewed intensity.

President Alija Izetbegovic, Bosnia's Muslim leader, acknowledged this week that his side had not yet matched its enemies' firepower.

His remarks reflect growing concern in Sarajevo that if the embargo is lifted, Bosnian Serb forces would quickly move to crush the government army before it could get heavy weapons and learn to use them effectively.

The fighting ability of the Bosnian army has improved since the creation of a Muslim-Croat federation six months ago, but troops are still organised on a local basis and are ill-prepared to fight beyond their village or town.

UN officers say that if the embargo is lifted, it could take at least a year for the Bosnian army to make proper use of what equipment it received. Mr Radovan Karadzic, the Bosnian Serb leader, claimed last week his adversaries lacked professional officers capable of handling heavy weapons.

General Ratko Mladic, Bosnian Serb commander, has shown little concern about the arms embargo. "Let them lift it," he had told the independent daily Borba. Another Bosnian Serb officer said: "If they lift the embargo, the UN would leave and we could fight a real war. We would finish them off quickly."

One of the first casualties, in the event of an all-out war and withdrawal by the UN ground forces, could be the UN-designated "safe areas" for Muslims in eastern Bosnia.

But some prominent figures on the Bosnian Muslim side unequivocally favour a lifting of the arms embargo. They include Mr Elvir Fikrić, prime minister of the Muslim-Croat federation.

Italy, Britain and Spain would be excluded from centre of Community

CDU proposes an EU top five

By Quentin Peel in London and Michael Lindemann in Bonn

Italy, a founder member state of the European Union, as well as Britain and Spain, would be excluded from the five-nation "hard core" of a future flexible community, according to a top policy document published yesterday by Germany's Christian Democrats (CDU), the leaders of the country's coalition government.

Their vision of an EU of "variable geometry" would be centred on only five of the original founding members - France and Germany, as well as Belgium, Luxembourg and the Netherlands.

However, the reformers say their plan "does not imply abandoning hopes that Great Britain will assume its role in the heart of Europe", as Mr John Major, the British prime minister, said in Bonn three years ago. Rather, they hope that by forcing the pace of European integration, Britain will in turn be forced to "clarify its relationship with the rest of the EU."

The five-nation future core would be expected to co-ordinate ever more closely not only on monetary policy, in keeping with the plans for economic and monetary union, but also

The European Union should produce a white paper on defence to define "defence" and its security interests and how to defend them in conjunction with Nato, the French prime minister, Mr Edouard Balladur, proposed yesterday, writes David Buchan in Paris. Expanding on the vision of a multi-speed Europe that he unveiled earlier this week, the prime minister made clear at a meeting with French ambassadors that such a defence white paper should be prepared by EU governments in contrast to the economic white paper drafted last year by Mr Jacques Delors' European Commission.

Mr Balladur's proposal seems to stem from disappointment that the defence white paper which his government produced earlier this year, and which committed France to maintaining military spending in the 1995-2000 period, has not evoked any matching commitments or ambitions from France's EU partners. At the same meeting, Mr Alain Juppé, the foreign minister, called yesterday for big changes in EU institutions at the planned 1996 revision of the Maastricht treaty. "For France", he said, "it is a question of a significant reform, not a simple re-plastering job." The government's foreign policy pronouncements are designed to signal France's ambitions for its EU presidency in the first half of next year. However, they drew a sharp reaction from President François Mitterrand who tartly reminded the prime minister that the French constitution gives the president the first word in foreign and defence policy.

on fiscal, budgetary, economic and social policy.

The future structure of an expanding EU, to include not only the Scandinavian countries, but also the emerging democracies of central Europe, was spelled out yesterday by Mr Wolfgang Schäuble, the parliamentary leader of the Christian Democrats, and the second most powerful man in Germany's ruling party after

Chancellor Helmut Kohl.

For the first time, they have openly stated their view that Italy can no longer qualify to be a member of the inner core if the EU inevitably moves to multiple speeds, or variable geometry. The expressions mean that different groups of the member states will co-ordinate their policies in different ways, depending on the subject concerned: some will opt for

monetary union, others for a common foreign and security policy, and yet a third combination for a common social policy, for example.

"For the formation of European policy this is a period of many crises but also of many chances," Mr Schäuble said. "Variable geometry... gives us better chances to complete this process, given the different, sometimes competing views. We must accept that not every member can accept every step at the same time."

Along with the CDU's sister party, the Bavaria-based Christian Social Union (CSU), Mr Schäuble presented a comprehensive five-point programme for the next phase of radical reform of the EU, intended to reconcile the conflicting demands of ever closer integration with continuing enlargement towards eastern Europe.

This includes the overhaul of all the main EU institutions, granting still more democratic control to the European parliament, while limiting the authority of the Council of Ministers, in which the governments of the member states are represented. Apart from the reinforcement of the "hard core", it also involves ever closer co-ordination between France and Germany, "raising

the quality of relations to a new level."

Germany and France form the core of the hard core," the document, called Reflections on European Policy, says. "Their special relationship faces a stiff test because it too is beginning to show signs of differentiation of interests and perceptions, which might cause them to drift apart."

It suggests that the two must overcome their differences of opinion on "fundamental issues of economic policy", including industrial policy and competition, as well as, by implication, trade protectionism. There must also be a debate on the long-term objectives of the common agricultural policy, and on basic features of the future financial system. The other key points in the plan are the reinforcement of the EU's common foreign and security policy, and its enlargement to the east.

On foreign and security policy, it stresses the priority needs for a common policy on stabilising central and eastern Europe, development of relations with Russia, and a common policy towards the Mediterranean region, including north Africa. It also singles out development of "a strategic partnership" with Turkey.

Late payments raise unrest fear

Moscow warns on wages crisis

By John Thornhill in Moscow

Mr Oleg Soskovets, Russia's first deputy prime minister, has warned that the country's escalating late payments crisis could spark social unrest with severe political repercussions.

According to Russian press reports, Mr Soskovets told a meeting of economic ministers, bankers and industrialists on Wednesday that the failure of many energy companies to pay their workers for months could prompt mass action by coal miners and oil and gas workers. An Economics Ministry report estimated that late payments of wages in industry and agriculture had risen from Rb500bn at the beginning of the year to Rb4,000bn by August 1, with the energy sector being badly hit.

The Russian government is grappling with ways of resolving the internal debts crisis but appears torn between whether to stick to a strict monetary path or try indirectly to inflate its way out of its difficulties by issuing fresh credits. Many Russian companies claim that the accumulation of inter-enterprise debt - now estimated at \$45bn (\$29bn) - has created a cash flow crisis making it impossible to pay their workers. They are demanding cash injections from the govern-

ment to ease the liquidity problem.

The government commission for dealing with late payments, chaired by Mr Soskovets, has proposed an alternative package of measures including: ■ Forcing companies to settle their overdue debts out of their hard currency accounts. Many companies have hidden away funds in foreign bank accounts to avoid paying taxes and to hedge against inflation.

■ Insisting that enterprises could not pay dividends until their outstanding debts have been settled - a proposal which has prompted outrage among industrial managers.

■ Greater investigating powers to assess the true financial state of troubled companies.

■ Encouraging the use of promissory notes as a non-inflationary means of settling debts.

Mr Anatoli Chubais, privatisation minister, has also suggested formal bankruptcy procedures could be used more aggressively to concentrate the minds of the managers of 300 companies which account for the bulk of the inter-enterprise debt. Mr Chubais cited the example of the Kristal enterprise, manufacturer of Stolichnaya vodka, which had suddenly "found" Rb500bn to repay a debt when it was threatened with bankruptcy.

Russia clamps down on TV advertising

By John Lloyd in Moscow

The Russian government yesterday approved a draft law on advertising designed to stop the blanket advertising which propelled the collapse of MDM financial company into most Russian homes through TV advertising.

The draft comes as advertising executives say that Russia's TV advertising market is becoming rapidly more sophisticated and profitable, and is steadily acquiring the range of products which provide the staple of western TV ads.

The draft, still to be passed by the state duma (lower house of the parliament), bans all advertising from unlicensed companies - as MDM was - and prohibits any company from advertising more than twice in one hour on TV or radio. MDM swamped TV programmes with as many as five commercials in an hour.

The draft legislation also lays down that all advertisements be "trustworthy and conscientious"; bans subliminal advertising and all advertising for alcohol and cigarettes; and calls for the need to protect the young. It also decrees that commercials "do not discredit works of art representing national or universal values". This is to prevent

the satirical or comic use of art works and historical figures.

Mr Victor Chernomyrdin, the Russian prime minister, called the measure "timely" and said he had opposed more radical suggestions to cut down by decree the volume of

The draft lays down that advertisements be "trustworthy and conscientious"; bans subliminal ads; and those discrediting works of art which represent 'national or universal values'

advertising in newspapers and in the broadcast media. MDM was far and away the largest advertiser on TV, spending on some estimates up to \$100m (\$64.5m) annually on pushing its shares through commercial channels using the Golsby family of working class Muscovites.

Mr Bruce MacDonald, head of the BBDO agency in Moscow, said yesterday that "no other advertiser came close".

However, a number of western consumer goods companies are now spending heavily on TV commercials as they

seek to buy their places onto the increasingly choosy Russian market. Mars, the confectionery company which has established a manufacturing plant in Russia, is thought to be spending around \$20m on an annualised basis - while western cigarette and cosmetic companies are spending between \$2m and \$5m each a year on their products.

The largest Russian services companies and banks. Many of these are either establishing their names through rather grandiose displays linking their enterprises to Russian historical figures or events, or pushing shares.

Alcohol and tobacco advertising on TV accounts for some 5-8 per cent of the total, according to Mr MacDonald. Foreign brands of alcohol have proved particularly popular on the Russian market, with even the vodka sector now showing a one-third penetration by overseas brands.

However, whole sectors of consumer advertising such as cars, certain kinds of foods and some kinds of financial services such as mortgages are wholly or largely absent from the screen. Mr MacDonald said that "it would be better if the industry could develop its own code of conduct and police itself, as in other countries - but frankly it's not yet in a position to do so".

EUROPEAN NEWS DIGEST

Schneider head shuns summons

Mr Didier Pineau-Valencienne, chairman of the French industrial group Schneider, is to ignore a summons by Belgian authorities involved in a fraud inquiry. A Belgian legal official said an investigating magistrate, Mr Jean-Claude Van Espen, had summoned Mr Pineau-Valencienne to Brussels for an interview tomorrow. On Wednesday Schneider said it had taken steps to get an annulment of the legal proceedings taken against Mr Pineau-Valencienne in Belgium which led to a 12-day spell in prison in late May and early June. The company has said its chairman is willing to co-operate with Belgian officials, but only in France and under the supervision of French legal authorities.

Mr Pineau-Valencienne was arrested in May after he went voluntarily to Brussels to be interviewed by Mr Van Espen, who is investigating alleged fraud in the affairs of Cofibal and Cofimines, Schneider's Belgian units. Schneider said its lawyers believed the magistrate violated the 1989 European Convention on judicial co-operation and Belgian rules of procedure in criminal investigations. *Reuter, Paris*

Ukraine warning on N-treaty



The chairman of the Ukrainian parliament's foreign affairs commission signalled yesterday that the former Soviet republic might delay joining the Nuclear Non-Proliferation Treaty (NPT). President Leonid Kuchma (left) has said he will present the NPT, under which Ukraine would give up nuclear weapons permanently to the communist-dominated assembly in October for approval. President Kuchma is due to visit the US in November, and Washington has put pressure on Kiev to join the pact. But Mr Boris Olshyn, chairman of the influential foreign affairs commission, said parliament would sign up for the NPT "when we are ready". "This won't happen so quickly. This time we have to be careful. One should not make romantic statements about a non-nuclear zone when all around us are nuclear states." Many Ukrainian leaders, including Mr Alexander Moroz, chairman of parliament, have criticised the US for dragging its feet on a promised \$350m (\$225.5m) in disarmament aid. *Reuter, Kiev*

Closure at Tula arms plant

Russia's Tula arms factory stopped production yesterday for the first time in its 300-year history when it was unable to pay its workers, the Itar-Tass news agency reported yesterday. Customers, including the state, have not been paying the factory for orders and production at the plant, 175km south-east of Moscow, has fallen 97 per cent in three years. Only 40 per cent of the workers were paid in June and the factory did not pay anyone in July or August. Workers have been put on leave until October 1. The factory had tried to stay afloat by increasing its output of hunting weapons after it stopped making submachine guns, one of its last key military products, in January. *AP, Tula*

VAT savings elude Germans

German companies and financial authorities have not benefited from the expected savings following the abolition of VAT after the creation of the European internal market in 1992, according to a government report. The new VAT law which applies during the present transition period has created "an almost incomprehensible amount" of extra work, according to companies and tax advisers. Government brochures, explaining the new regulations, were not available soon enough, the report said. Companies, especially smaller and medium-sized ones which were expected to benefit most from the single market, complained about the extra work resulting from new reporting requirements and more complicated searches for business partners' VAT identification numbers. Financial and personnel savings had not been possible, the report added, and differing legal and tax systems in the 12 EU member countries meant that computer software programmes needed to be constantly updated. *Michael Lindemann, Bonn*

Cables to anchor Pisa tower

Scientists plan to anchor the Leaning Tower of Pisa to thick steel cables buried deep underground to help stop it tilting further. Mr Michele Jambolowski, an engineer working with other experts to save the tower, said yesterday that work on the project would start next month. It would involve sinking 10 steel cables up to 50m below ground and anchoring them to a reinforced concrete neck that would be built around the base of the 14th century tower, which leans about 5m off the perpendicular. The scheme is a temporary solution until a more permanent way to stabilise the tower's famous slant can be found. *Reuter, Pisa*

Stalemate in fishing dispute

The Norwegian and Icelandic foreign ministers failed at a meeting of Nordic states yesterday to make progress in a dispute concerning fishing rights around the Svalbard islands. Mr Bjorn Tore Grodal, Norway's foreign minister, and Mr Jon Baldvin Hannibalsson, his Icelandic counterpart, agreed at the meeting to open a dialogue but came no nearer to a solution to the dispute. "We agreed to disagree," said Mr Grodal. Norway has sovereign rights over Svalbard and claims the right to regulate fishing in the islands' 200-mile economic zone in the Barents Sea. This is disputed by Iceland. *Hilary Barnes, Copenhagen*

ECONOMIC WATCH

Germany's output buoyant



German industrial production in July rose 2.2 per cent from June and 7.5 per cent against the same month last year, according to preliminary figures released by the federal statistics office. The office warned, however, the figure would be revised down by 1.5 percentage points once final data had been collected, but analysts said the final rate of 0.9 per cent would still be strong. Final figures for June were revised upwards by 0.8 percentage point, taking the monthly rise to 1.5 per cent. Figures for June and July - the two-month period diminishing seasonal factors - show production in manufacturing industry increased 5.9 per cent against the same period last year. Overall industrial production rose 6.2 per cent against the two-month period a year ago, with the largest rises coming in investment goods, up 7.9 per cent, and raw materials and production goods, up 8.2 per cent. *Michael Lindemann, Bonn*

■ Norway's unemployment rate in August fell to 5.6 per cent of the workforce compared with 5.8 per cent in July, according to figures released yesterday by the Norwegian Labour Directorate. The number of jobless in August fell to 118,448 people from 124,347 in July.

■ The Dutch government said yesterday that wage increases negotiated as part of collective labour agreements would have risen a modest 0.8 per cent during the 12 months ending December 1994.

Lesson for man who hopes to tame Eta

The Spanish justice minister's anti-terrorist policy appears to have backfired, writes Tom Burns



While the IRA ceasefire nudges the British and Irish governments towards peace settlement for Northern Ireland, politicians in Spain are at odds over how to deal with Eta, the Basque separatist organisation which to date has given no sign of ending a campaign of violence that, like Ulster's, stretches back 25 years.

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The row centres on a discreet partial parole policy for selected members of the 525-strong jail population of Eta members - a terrorist prison count that bears comparison with that of Northern Ireland. This policy is sponsored by Mr Juan Alberto Belloch who in May added the responsibilities of the Interior Ministry to his existing job of justice minister. An independently-minded magistrate before he joined the socialist government last year and now considered one of the most influential members of Mr Felipe Gonzalez's cabinet, Mr Belloch has discovered that dealing with Eta as a minister is a lot more complicated than passing sentences on the group's gunmen in a courtroom.

His partial parole policy, which has been fiercely rejected by the conservative Partido Popular opposition and has had no immediate impact on Eta's commitment to violence, threatens to derail both his own reputation as a minister and the Spanish parliament's long-standing bi-partisan approach to terrorism.

Mr Belloch seeks with his initiative to hasten the end of Eta by deterring the separatist organisation's "patriots behind bars" propaganda.

Critics contend that the policy risks allowing Eta to raise its operational ability by regrouping released gunmen and by attracting new recruits on the grounds that the government is "soft" on terrorism. Known as the *Bizkaitarra* because of his dual ministerial



Criticised: Spanish justice minister Juan Alberto Belloch

responsibilities, Mr Belloch had a second successive day of talks yesterday with opposition parties in preparation for a formal all-party of meeting this month which will attempt to re-establish a consensus on counter-terrorism policy.

Mr Belloch faced hostile questioning in parliament a month ago when he admitted that 14 Eta members, who were not named but are understood to be serving long sentences on murder counts, had received partial paroles which allow them out of prison during day-time and at weekends.

The controversy over the disclosure of the policy coincided with an Eta bomb attack in

Herri Batasuna, the radical Basque nationalist coalition that supports Eta's separatist gunmen and has close links with Ireland's Sinn Féin, yesterday called on the Spanish government to imitate the example of the British cabinet by renouncing the political nature of violence in the Basque country, writes Tom Burns. "The logic of the [Eta] Major government is in direct contrast to the closed and hostile position of the Spanish government which, in the words of [Interior and Justice minister Juan Alberto] Belloch, has only yesterday rejected all avenues towards an understanding and called, once more, for regression," the Basque coalition said in a statement. The Basques described the developments in Ireland as "common sense".

Madrid that killed one of Spain's key army officers, General Francisco Vegallos who as director-general of defence policy had played a key role in the modernisation of Spain's armed forces. Mr Belloch was accused in parliament of failing to consult the opposition over his initiative and of breaking a formal understanding that any partial freedoms for jailed Eta members would only follow a sustained ceasefire by the separatist organisation. "The [bi-partisan] agreement was that while Eta continued to kill, *Etarras* would go to prison, not leave it," said the conservative opposition

spokesman, Mr Federico Trillo. The row over the prison policy continued during August as youths sympathetic to Eta clashed with security forces during the Basque region's summer fiestas. Earlier this week, on the peak day for returning holidaymakers, Eta showed its muscle again when it took a leaf from the IRA's violence manual and bombed railway tracks linking the cities of Pamplona and Zaragoza.

As one of the chief legal officers in Bilbao, the main city in the Basque region before he became a minister, Mr Belloch balanced stiff sentences for Eta gunmen with a close watch on

the possible maltreatment of separatist suspects. He took a particularly strong line in supporting fellow magistrates investigating a celebrated case concerning police involvement in a shadowy anti-Eta death squad.

The minister's acute embarrassment at the initial details of his controversial partial parole initiative coincided with the extension of similar partial freedom privileges to two former police officers who in 1991 received 106-year sentences for their part in the anti-Eta death squad. Mr Belloch knew both men well from his days as a magistrate in Bilbao.

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US N-waste clean-up under attack

By James Harding
in Washington

The US department of energy's programme for cleaning up nuclear waste sites is extremely expensive and often ineffective, because of its failure to adopt new technologies, according to a General Accounting Office report.

The Congressional auditor's review of use of innovative technology in nuclear waste operations notes that, although the department has received \$23bn (£14.9bn) for environmental management since 1989, "little clean-up has resulted".

The result has been that, during the last five years, only about 10 per cent of the department's contaminated sites have been cleaned or closed, the GAO observed. During the past 40 years, more than 1bn cubic feet of hazardous and radioactive waste at weapons plants has been disposed of. Many of the containers housing that waste are now unsafe.

"As a result of earlier disposal practices, soil and groundwater contamination is now widespread," it said. The GAO said that more than 5,700 individual contaminated areas have been identified on department lands.

"Even where new technology has been successfully demonstrated, agency officials are reluctant to try new approaches, tending instead to choose conventional techniques to clean up their facilities," the report says.

Resistance to innovative techniques is due in part to the department's reliance on "on site contractors who may favour particular technologies on the basis of their own experiences and investments", and local governments which "view

faster clean-up as a threat to local economies" and see little incentive to adopt more efficient methods.

The GAO stresses that developing less costly and more effective technologies may be the only way the US can afford the cleanings, which the department recently estimated would cost \$300bn in the next 30 years.

The department, which requested the review in January 1993, said yesterday it was taking steps to encourage technological innovation. "This is a problem we've known about for some time and, over the last two years, we have been trying to come up with ways of utilising new technologies," said Mr Gerald Boyd, director of the Office of Special Projects in technology development.

However, the GAO pointed out that one of the other reasons for the tendency to use conventional techniques was "the co-ordination flaws in the department's clean-up program. Individual offices have not worked together... to overcome the resistance to using improved technology, nor have offices worked together to develop a comprehensive assessment of technology needs," the report said.

The GAO cited a few cases of the department having made substantial efforts to develop new technologies. It mentioned the vitrification that turns waste into glass for easier disposal at the Hanford Site, near Richland, Washington.

It also suggests considering innovations such as heating the ground to vaporise liquid contaminants, injecting air into wells, and digging trenches to create chemical barriers so as to separate dissolved contaminants from ground water.



Ricardo Alarcón arrives for the talks in New York. PHOTOFEST AP

The US and Cuba yesterday concluded a first round of talks about migration, which the US State Department called "serious, professional and business-like", writes James Harding from Washington.

Mr Ricardo Alarcón, the former foreign minister leading the Cuban delegation, had said, before the talks in New York, that the only way to end the exodus of Cubans to the US was for Washington to stop its 33-year-old embargo against Cuba.

But Mr Michael Skol, heading the US side, maintained its position that it would discuss only migration matters.

US manufacturing output slows

By George Graham
in Washington

Activity in US manufacturing slowed down in August, but inflationary pressures continued to rise, according to the National Association of Purchasing Managers' monthly index.

The NAPM index fell to 56.2 per cent last month, a drop from the 57.8 per cent recorded in July, but still a level indicating strong expansion of the economy.

"The past relationship between the purchasing managers' index and the overall economy indicates that if the

PMI were to average 56.2 per cent for all of 1994, then real gross domestic growth should approximate 4.2 per cent," said Mr Ralph Kauffman, chairman of the association's business survey committee.

However, the NAPM's index of prices paid for materials rose in August to 74.5 per cent, with every manufacturing sector reporting higher prices in August than in July.

"This increase in material prices is one of the strongest concerns of purchasers, with some indicating inability to raise product prices to cover the increased material prices," said Mr Kauffman.

Poor delivery performance by suppliers was also now a prime concern for purchasing executives, said Mr Kauffman, with deliveries becoming much slower in August as many material suppliers were now operating at maximum capacity. Printing and publishing, plastics and rubber, clothing, textiles and glass were among the industries reporting the most trouble in obtaining deliveries.

Financial markets, meanwhile, are closely watching today's employment statistics for further confirmation that the pace of growth is slowing. The unemployment rate

dropped in July to 6.1 per cent, close to the rate at which many economists believe the labour market will start to tighten and wage demands start to rise, and a further drop could prompt the Federal Reserve to tighten monetary policy further.

One indicator that has suggested there is more slack left in the labour market is an index of help-wanted advertising compiled by the Conference Board, a New York-based organisation with more than 2,000 companies among its members. That index rose only slightly to 121 in July after dropping in June.

Mexico high-level drug claim denied

By Damian Fraser in Mexico City

The office of Mexico's attorney-general has dismissed allegations by one of its former high-ranking employees that senior government and party officials are involved with drug traffickers.

Mr Eduardo Valle, until earlier this year a senior aide in the office, has alleged that a cabinet minister has links with the powerful Gulf of Mexico drug cartel.

Mr Valle's accusations appear to be based on at least one meeting which the minister is known to have had with a 31-year-old Mexican woman.

Some investigators see an involvement by Mr Juan García Abrego, one of the most powerful of Mexico's drug barons.

Mr Valle, who resigned from the attorney-general's office after claiming that his efforts to investigate the cartel were being blocked by other police officials, has further alleged that the security team of Mr Luis Donaldo Colosio, the ruling party's presidential candidate who was assassinated this year, had been infiltrated by the Gulf cartel. Mr Valle believes that the cartel may have ordered the assassination.

Mr Valle has also criticised the new attorney-general for appointing drug enforcement agents who, in Mr Valle's opinion, are protectors of drug traffickers.

The attorney-general's office interviewed Mr Valle last week in Washington, where he is now living. It then stated there was a "lack of evidence to determine any respon-

sibility of public servants mentioned by Mr Eduardo Valle in whatever activity connected with the so-called Gulf Cartel."

It said there was no evidence to suggest Mr Colosio's security team had been infiltrated by drug traffickers.

Mr Valle had been hired by Mr Jorge Carpizo, a former attorney-general and now the interior minister. Mr Valle is a former leftist student leader and politician, and officials have sought to discredit him as unreliable and possibly unstable.

His accusations have generated wide publicity in Mexico's independent press but state-controlled radio and television have been instructed to keep him off the air. A prominent radio host was recently fired for interviewing Mr Valle.

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Bermuda plans tougher rules for insurance market

By Richard Lapper

The Bermuda government has announced plans to tighten its insurance regulations, in a move designed to affirm the long-term stability and financial health of its rapidly growing commercial insurance and reinsurance market.

Over the last two years between \$4.5bn and \$5bn (£3.2bn) of capital has been pumped into the island, much of it directed towards the formation of eight new companies specialising in catastrophe risk.

The government aims to update a framework developed largely to control an industry dominated by captive companies - subsidiaries formed by industrial and service companies mainly to insure the risk of their parents.

The changes, which are expected to come into force by the end of 1995, were announced yesterday by Mr David Saul, the minister of finance, and include a range of tough new requirements.

Highly capitalised insurers writing significant amounts of "direct excess liability" and/or "property catastrophe reinsurance" will be required to dem-

onstrate minimum capital of \$100m, while some other insurers will also need to show higher levels of capital.

Solvency margins - the yardstick which compares net assets as a percentage of premium income and measures the financial health of an insurer - are to be radically tightened. These will be adjusted to levels which in some cases are more stringent than the international norm. The heavily capitalised companies will need to show solvency margins to at least 50 per cent, for example.

"The significant changes that have taken place in the Bermuda marketplace now require change in the insurance regulatory system," said Mr Saul. It was no longer appropriate to apply one set of regulations to all Bermuda insurance companies, he added.

The proposals "address the concerns held in London [one of the centres of the world's reinsurance market] that, come the next hurricane, some of these new reinsurers will simply head for the hills," said Mr Roger Scotton, director of information at the Bermuda Insurance Institute.

Argentina prepares major second round of privatisations

By Stephen Fidler,
Latin America Editor

The Argentine government is planning a second round of privatisations, to complete its transfer of federal enterprises to the private sector.

Mr Domingo Cavallo, economy minister, said the remaining privatisations, to take place by the end of 1995, would include the sale of all airports, three nuclear power plants, the post office, the federal mint and the country's largest petrochemicals plant. He gave no estimate of how much the new privatisations would raise.

The next round is to include enterprises which, for various reasons, it has been difficult to privatise in the past.

For example, the country's petrochemicals industry is in deep recession, with competition from cheap imports, previous privatisation of the airports, of which there are about

two dozen in the country, has been resisted by the Argentine air force, which has an important role in airport management.

Mr Cavallo, who was speaking to Argentine bankers, was also underlining the government's determination to keep public finances in order through 1994 and 1995.

He announced a hiring freeze in the public sector, including the military, and indicated vacancies would be left unfilled. Public spending on non-salary, non-investment areas would also be cut by 10 per cent, he said.

A similar 10 per cent cut was announced last year by Mr Cavallo but most ministries undershot their budgets anyway. According to Consensus Economics, a London-based economics consultancy, the average of private forecasts for the Argentine budget this year is for a surplus of 0.6 per cent.

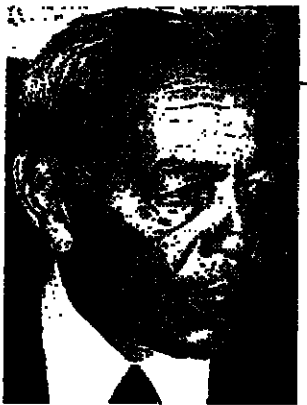
NEWS: INTERNATIONAL

Morocco and Israel to open liaison offices

By Julian Ozzane in Jerusalem

Israel and Morocco moved towards establishing full diplomatic relations yesterday, marking a further breach in the wall of Arab economic and political isolation which has surrounded the Jewish state since its creation in 1948.

Morocco will become the second Arab state to have direct ties with Israel after Egypt signed a full peace with its neighbour in 1979. Although Israel and Morocco will initially open "liaison offices" rather than embassies, Israel's foreign ministry said its mission in Rabat and Morocco's



Hassani: conference host

mission in Tel Aviv would be staffed by diplomats and cover all economic, cultural, trade and diplomatic activities including issuing visas.

Mr Shimon Peres, Israeli foreign minister, said the move paved the way to "an opening of a regional system of relations". Israeli officials said other Arab and Islamic states, such as Tunisia, Indonesia, Malaysia, Kuwait and Oman could soon follow Rabat's lead. They also said the step erodes the Arab economic boycott of Israel, which the Israeli Chambers of Commerce estimates has cost the Jewish state about \$60bn (\$22bn) in lost trade and investment since 1950.

Morocco's decision to open its liaison office in Tel Aviv follows international diplomatic practice of not recognising Jerusalem as the capital of

Israel. King Hassan of Morocco is also chairman of the Islamic Conference Organisation's Jerusalem committee and as such is committed to reversing Israel's assertion of sovereignty over the city.

The kingdom also said, in a separate statement aimed at maintaining a balance between Israel and the Palestinian self-rule areas, it would open a liaison office in Gaza for relations with "Mr Yasser Arafat, President of the State of Palestine".

Israel has long maintained clandestine relations with Morocco and trade between the two countries was estimated to be worth \$100m last year. Up to 600,000 Israeli Jews have Moroccan origins and both states believe the potential for trade and tourism is considerable.

In October King Hassan of Morocco will host an international conference on economic development in the Middle East sponsored by President Bill Clinton. Hundreds of companies from Israel, Europe and Arab states are expected to attend the Casablanca event to devise ways of financing multi-billion dollar Middle East projects in the post-peace era.

Israelis, particularly Jews of Moroccan descent, will be overjoyed by the move in a country where many people judge the peace process by the extent to which it ends Israel's isolation.

Israeli businessmen will also hope relations with Morocco will help end the Arab economic boycott. Jordan and Egypt both have formal trade relations with Israel. Qatar is talking with Jerusalem about a natural gas project and Kuwait and Saudi Arabia have eased some of the boycott rules to attract US companies which do business with Israel. Egyptian industrialists, who visited Israel last week, said the time had come to "warm-up" the 16-year-old "cold peace" with Israel and forge much deeper economic, trade and financial ties. A formal suspension of the boycott, however, is unlikely until Israel withdraws from the still-occupied West Bank and Golan Heights.

'Mr Clean' foresees new power bloc

Japan could soon have a coherent opposition, William Dawkins writes

Japan's fragmented opposition parties are just weeks away from pooling forces to create the first powerful opposition group for nearly 50 years.

That is the belief of former prime minister Toshiki Kaifu, 54, father of the reforms to have swept Japanese politics over the past year. The "Mr Clean" of Japanese politics yesterday took a break from campaigning in his home prefecture of Aichi, the heartland of the Japanese car industry, which is due for a critical by-election in 10 days, to explain his hopes.

If Mr Kaifu is right, Japan's frustrated economic partners will have cause to throw their hats in the air. Lack of a coherent opposition during nearly four decades of one-party rule by the conservative Liberal Democratic party is commonly held to have suffocated political debate.

This has bolstered the power of the state bureaucracy, often tempted by economic protectionism, which is blamed for contributing to Japan's huge current account surplus. The new group, provisionally named the "new party" by the Japanese press, would have about 200 lower house seats, so rivaling the LDP for size.

Mr Kaifu created a stir two months ago by leaving the LDP, in a failed attempt for the premiership, which was seen by his enemies as a tumbled opportunism. He was prompted, he said, by distaste for his colleagues' decision to form a coalition with the LDP's traditional foe, the Social Democratic party, to attain the parliamentary majority needed to return to power after a humiliating year in opposition.

"The LDP lost all the honour



Toshiki Kaifu: much depends on Aichi by-election

Tony Wain

of the past by choosing a prime minister from the SDP, just to get back into government. It is my responsibility, as the one who started reform, to say this was wrong," said Mr Kaifu. He had repeatedly warned that the LDP was losing its way ever since being ousted by the old

guard three years ago for being too keen on reform. In the weeks since leaving the LDP, Mr Kaifu has built a prominent place in the pre-reform opposition. He is working with Japan's other two most popular post-war prime ministers, Mr Morihiro Hosokawa

and Mr Tsutomu Hata, to create the new super-party, the subject of intense backroom bargaining over the past month.

Mr Kaifu was certain the 10 parliamentary opposition groups will shortly agree a common policy platform and joint electoral candidates. "I assure you we will succeed," he said. He is ostentatiously non-committal on suggestions that he is a candidate to lead the new super-party.

Much depends on the outcome of the Aichi by-election for an upper house seat on September 11. It will give a measure of Mr Kaifu's own electoral value, as leader of the campaign, and could help win over those opposition members still doubtful about joining the super-party. It will also be watched closely by the government coalition, as the first election test since it grabbed power at the end of June.

Aichi's upper house poll will also give a clue to whether or not political reform really will shake up Japan's power structure, because it will take place under electoral rules similar to those due to come into effect for the more powerful lower house next year.

There will be single candidates from the government and opposition coalition groups, fighting openly for a single seat, rather than a cosy share-out of several seats, as under the old multi-seat constituency system.

Mr Kaifu, making a brief stop in his Tokyo office before returning to Aichi to campaign for the opposition candidate there, believes the outcome will make or break the government. "It is going to be difficult for an administration composed of opposite poles to come

Jiang set to raise profile with tour

By Tony Walker in Beijing

When President Jiang Zemin of China arrives in Moscow today at the start of a four-day visit, his purpose will be twofold: he will be seeking to promote a closer commercial and strategic partnership with Russia and at the same time boosting his own stock on the international stage.

With China in a transitional phase in preparation for a new generation of leaders (Mr Deng Xiaoping, the paramount leader, is in failing health), it is important for Mr Jiang to assume the aura of an international figure.

His visit to Moscow, and subsequently to Ukraine and France, is part of attempts to bolster his appeal. It follows his appearance at the Asia

China has approved its first private bank with the shareholders coming from domestic private companies, according to the official Xinhua news agency, Tony Walker writes.

The People's Bank, China's central bank, gave its approval to the new institution as part of continuing reforms of the banking sector.

China has been licensing some new banks, but they have been connected with public sector companies or municipalities.

Mr Jiang Shuping, chairman of the All-China Federation of Industry and Commerce, said the new bank would not accept foreign shareholders, but it would act for foreign clients.

Little detail of the new bank was provided in a brief Xinhua dispatch, but Mr Jiang said the bank's initial capital would be ¥20bn (\$2.5bn).

The establishment of the privately owned bank was described as a "significant experiment" in China's banking reforms.

Pacific Economic Co-operation (Apec) forum in Seattle last November, which was also aimed at enhancing his credibility at home and abroad.

Mr Jiang is due to initial a document on border demarcation in the remote western region of China and sign an accord in which the two countries agree not to target each other with nuclear missiles. All this is a far cry from the tension between the communist giants in the early 1980s, which led to a brief border war and frequent skirmishes. When Mr Jiang initials the border agreement, 99 per cent of border disputes will have been resolved, according to an official Xinhua news agency dispatch.

The two sides will also sign a communique aimed at providing a framework for development of political and commercial ties into the next century. While two-way trade at \$24.5bn (\$1.46bn) for the first six months of this year is down 39 per cent on the same period last year, Beijing and Moscow envisage the continued development of a substantial trading relationship.

Two-way trade reached \$7.6bn last year, an increase of 30 per cent over the year before, making Russia China's seventh largest trading partner. Exchanges this year have been hit by a 50 per cent slump in the first six months in border trade because of disagreements over customs and immigration issues.

Russia is sending sensitive to a flood of Chinese traders moving across the border into its far-eastern regions. Russian officials fear this is a form of "colonisation", with the Chinese over-staying their visas.

"This situation is not good and should be corrected or stopped," Mr Jiang told Russian reporters in Beijing this week, but he added, using a Chinese idiom: "These are only problems in the course of development. We should not give up eating for fear of choking."

Mr Jiang's visit to Moscow follows increasingly frequent contacts between Chinese and Russian officials in the past year or so.

Russian visitors to China this year included Mr Victor Chernomyrdin, the prime minister, and Mr Andrei Kozyrev, the foreign minister. China's foreign minister, Mr Qian Qichen and the defence minister, Mr Chi Haotian, both visited Moscow this year.

China and Russia are seeking to extend their defence co-operation, with the Chinese pressing the Russians to supply technology for a fighter aircraft. China has also been a big purchaser of Russian defence equipment, with orders for 26 Su-27 fighters, and plans for another squadron.

Shingles drug output ordered suspended

By Ennio Terazono in Tokyo

Japan's ministry of health and welfare yesterday ordered the suspension of production of a shingles drug whose side effects allegedly killed 15 patients last year.

The ministry said Nippon Shoji violated the Drugs, Cosmetics and Medical Instruments Law, as the company only reported one death of a patient during clinical trials, when in fact three

patients had died. The suspension will last 105 days from next Monday. Sorivudine, the shingles drug, was brought to the market last September, but was withdrawn two months later following the deaths.

Until now, the health ministry, Nippon Shoji and doctors have been blaming each other for the deaths. Doctors and the company have been pointing fingers at the ministry for allowing the drug to be marketed in the first place, while the

doctors have been blamed for not reading the warning against prescribing Sorivudine along with certain other drugs.

In order to avoid criticism, the ministry is not withdrawing official approval of Sorivudine, since it would raise questions over why the government authorised the drug in the first place.

Meanwhile, Nippon Shoji is under investigation from the Securities and Exchange Surveillance Commission, for

alleged insider trading. A total of 139 company employees and their relatives are alleged to have sold the company's stock ahead of the announcement of the deaths.

Analysts say the suspension would be a blow to Nippon Shoji's earnings. Some 91 per cent of the company's revenue comes from drug wholesaling, but profit margins on the business are thin and about a quarter of earnings derive from drug manufacturing.

Population curbs have worked, but there is still far to go, Mark Nicholson reports

Where Egypt boasts decade of progress

None of the women attending the Cairo Family Planning Association clinic in the sprawling suburb of Zein-hom yesterday knew that the world's biggest population conference was due to open up the road on Monday. Few probably cared; none seemed the least persuaded that seeking family planning advice might be un-Islamic.

"I'm convinced Islam is not against family planning," said Hoda, a 30-year-old woman swathed in a black Hejab veil, the badge of Islamic piety. "My brother-in-law is a religious man and he ordered his wife not to use contraception. He tried to deter me, but I didn't listen. I encouraged all my friends to come to the clinic. Now all of them blossom like fresh jasmine."

Hoda has stopped at five children, and was having a routine check on her IUD, a visit which cost 25 piastres (about 5p) at this private clinic. Her 21-year-old sister had come along too. She has two daughters and said that was enough:

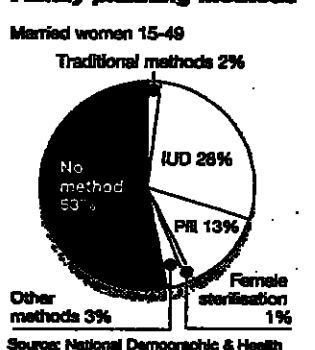
"I have an IUD, and don't plan to have any more children. My husband would like a son, but he doesn't pressure me."

For most women visiting the clinic, said Dr Mawahab el-Mouelhy, a UK and US-educated doctor, birth control is a practical consideration, determined usually by their health and, perhaps more commonly, because they simply cannot afford to clothe, feed, educate or house more children.

For all the criticism by Egypt's religious conservatives of the population policy agenda of Monday's International Conference on Population and Development, the strictures of Islam have so far done little to put a brake on a decade of progress in population control, which Egypt's policymakers and aid workers consider little short of remarkable.

The population growth rate has plunged from 3 per cent to about 2.1 per cent. A fertility rate of 5.3 in 1980 has come back to an average of 3.9 births per woman, 2.9 in urban areas. Knowledge of family planning among married couples is almost universal, while 47 per cent of women use contraception in Egypt (predominantly

Family planning methods



Source: National Demographic & Health Survey, Egypt

IUD devices and the pill) against 24 per cent in 1980. Behind such results lie 30 years of concerted government policy, backed by foreign aid, of which USAID has provided 75 per cent of all family planning assistance, a total of about \$170m (\$113m), to fill the media with birth control information and stock and staff hundreds of clinics, enough for 96 per cent of all Egyptian women to be within 5km of a family planning centre.

But cheered as the government and organisations such as USAID are by such results, they remain far from meeting

their ambition of creating for Egypt a population growth which the country can comfortably sustain. At present rates, Egypt's 60m population grows by 1m every 10 months.

The constraints on the country's most basic resources are severe enough: all but 4 per cent of its 1m sq km is desert. A recent report by the UN's Economic and Social Commission for Western Asia reckoned Egypt was consuming 95 per cent of its available water resources and faced a water deficit by the year 2000.

By most estimates, the economy needs to generate about 500,000 jobs a year to mop up new entrants to the labour force, implying an annual growth rate of 5 per cent of GDP, more than twice the most optimistic estimates of present growth. The World Bank reckons that at least 5m new jobs must be created by 2000 even to halve the present unemployment rate of 20 per cent.

But population experts tend to agree that cutting the growth rate to perhaps 1.9 per cent is unlikely to come about by providing more pills, coils or publicly campaigns alone.

"There is something missing," says Dr el-Mouelhy.

"Which is the status of women in this country. We need to work hard on this. It's not just family planning, its about education of women."

Emphasis on the education of girls is a central theme of the conference's draft document to be discussed next week in Cairo, and one which groups such as USAID and the Population Council hope the conference's hosts will take to heart. A well established concomitant between raised educational standards among girls and subsequent falls in fertility rates is seen as the key to future policy in countries such as Egypt, these groups argue.

A guide to the task lying ahead for Egypt lies in the fact that, by conservative estimates, at least 66 per cent of Egyptian women are illiterate. Changing that will require more than the provision of teachers and schools, of which Egypt must already build on average one a day to keep up with the rise in schoolchildren. It will need an attempt to alter many ingrained attitudes, and is likely to depend on an improved economic climate. All that before the air can thicken with the scent of jasmine.

Falling prosperity hurts family planning

In a continent where population growth outstrips economic growth, Nigeria at 90m people is by far the biggest nation in Africa.

Until 1988, when Prof Okiye Ransome-Kuti, then health minister, launched a national population policy, Nigerians had been so proud of their self-styled tag as the "giant of Africa" that, as long as the oil money rolled in, they regarded high population growth as healthy, and saw little point in controlling the rate of growth.

Nigeria was then believed to have at least 110m people, putting it among the 10 largest populations in the world. The 1991 census caused a surprise: Nigeria had only 88.5m. The over-estimate was a result of inflated numbers by tribal chiefs and regional governors hoping to boost their political clout and revenue allocation.

The United Nations Population Fund has projected the

Paul Adams reports on Nigeria's special problems

average population growth rate between 1990 and 1995 as 3.1 per cent (which would double the population in about 30 years) with the birth rate at 45 per 1,000 persons and death rate at 14 per 1,000 (including infant mortality rate of 96).

The UN estimates the fertility rate at 6.1 children per woman, while the national policy set a target of only four.

Since the 1970s the urban population has risen from 30 per cent to nearly half and the rate of growth in the towns is higher at 5.5 per cent.

Generalising about Nigeria, a country of over 200 ethnic groups and very diverse cul-

tures, is often deceptive and never more so than in attitudes to education and the role of women.

In the mainly Christian south, female education and literacy are far higher than in the predominantly Moslem north, where even the discussion of birth control is not widely accepted.

In the south-east there is a high percentage of Catholics especially among the Ibo tribe. The alarming decline in social services during the 1990s has halted the progress towards family planning clinics and universal primary education especially in the north, bolstering the influence of the Koranic schools.

Even nationally, the UN paints a bleak picture. "The status of women in Nigeria has improved little over the last decade. In general, they are considered second-class citizens not by law but because of the social and cultural cir-

cumstances," says the UNFPA's 1993 review of the national programme. "Although some women have made considerable progress in the academic and business world, Nigerian women, particularly rural, are clearly underprivileged."

The literacy rate for women is 31 per cent (54 per cent for men) and more than half of all Nigerian women were married at the age of 15.

The problem of education lies not just with women. As a prominent women's group in Nigeria points out, there may be a target of four children per woman, but in a polygamous society many men far exceed that figure.

If the prospect of curtailing population growth is limited, the outlook for economic growth has become bleak. Despite the massive oil boom in the 1970s, the GDP income per capita is down to around \$290, about the level of 1963.

In the period, Indonesia has risen from a lower per capita income to a level three times that of Nigeria. In January's budget speech by finance minister Mr Kalu I Kalu, commented on three years of political uncertainty, capital flight government over-spending, which "resulted in a further decline in GDP growth rate from 4.5 per cent in 1991 to 2.9 per cent in 1993."

A comparison with the average growth rate of 5 per cent from 1988-91 demonstrates the enormity of the task involved in resuscitating the economy in 1994 and beyond," concluded Mr Kalu. Since then strikes, shortages and a dearth of foreign exchange have taken the economy further down hill.

Nigeria accounts for about half of West Africa's population, and whereas Ghanaians once poured into Nigeria for a better life, the chances of reverse migration look ever more likely.

NEWS IN BRIEF

Japanese car sales up sharply

Car sales in Japan showed their second successive month of growth in August, rising at a sharply increased pace which industry officials said was evidence demand was recovering. Gordon Gramb reports from Tokyo. The 9.3 per cent year-on-year jump in unit sales of passenger cars, according to the Japan Automobile Dealers' Association yesterday, compares with a 1.5 per cent uptick in July.

Demand was strongest for new subcompact models, to which leading manufacturers have attached competitive price tags. The figures exclude the special category of mini-vehicles with an engine capacity below 660cc, sales of which have been on a rising trend for some months.

Analysts said the improvement in the consumer market followed tax rebates provided as part of a government package to stimulate the economy.

Sales of all vehicles except minivans rose 12 per cent, a third successive gain and the first double-digit increase since August 1990. This stemmed in part from a 16.6 per cent leap in truck sales. Many older commercial vehicles are being replaced because of tightened emission and load requirements.

Toyota, the motor industry leader, sold 14.6 per cent more vehicles than a year ago, but the second-ranking Nissan remained out of favour, with a 3 per cent fall.

S African strikers fired on

Labour unrest in South Africa drew a violent response from the security forces when police fired on striking forestry workers, injuring at least 20. Private security personnel used stun grenades and rubber bullets to quell a disturbance by striking gold miners, Patti Waldmeir reports from Johannesburg.

Five miners were injured in demonstrations, including a 41-year-old miner who was shot dead by police. A 41-year-old miner was shot dead by police. A 41-year-old miner was shot dead by police. A 41-year-old miner was shot dead by police.

Labour unrest, either backed by unions or unofficial, has increased in South Africa since the black-majority government of President Nelson Mandela came to power in May. Pay is the biggest issue, as black workers raise their expectations following the demise of apartheid and white minority rule.

Uzbek dissident faces trial

Authorities in Uzbekistan have charged the country's most prominent dissident with anti-state activities - at the same time as the former Soviet Central Asian republic celebrates its third anniversary of independence, described by its president as "a guarantee of freedom". John Lloyd reports from Moscow.

Ms Vassiliya Inoyatova, who leads the banned opposition group Birlik (Unity), said earlier this week that she had been charged with breaking article 60 of the Uzbek criminal code, after police found two sacks of the newspaper Birlik, also banned, in her flat. No date for her trial has yet been set. All opposition activity is banned in Uzbekistan.

Zaire wants Rwandans out

Zaire wants the 1.2m Rwandan refugees on its territory to leave by the end of the month. Justice Minister Kamanda Wa Kamanda told representatives of Rwanda's new government yesterday, Reuters reports from Geneva. Speaking at the start of a ministerial meeting with the Rwandan government, Mr Kamanda said Zaire would encourage the return of the Rwandan refugees by halting the activities of Rwandans hostile to the new government in Kigali and disarming and encamping members of the former Rwandan government army.

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Iran presses Gulf states for tough security pact

By Frances Williams in Geneva

Iran yesterday called for a "defensive security" pact among Gulf countries, which would include an accord to curb the build-up of conventional arms in the region and the outlawing of weapons of mass destruction.

The proposal, the most detailed Iran has yet put forward, came in a speech to the United Nations Disarmament Conference by Mr Ali Akbar Velayati, foreign minister. However, it is likely to get a cool reception from Iran's Arab neighbours who distrust Tehran's brand of Islamic radicalism and its perceived ambitions for regional superpower status.

Yesterday's initiative reflects Tehran's concern at its exclusion from existing Gulf security arrangements since the defeat of Iraq in 1991 and its desire to reduce US influence in the region.

Iran, which has been seeking to rebuild its armed forces since the devastating eight-year war with Iraq ended in 1988, has viewed with disquiet the heavy armaments spending by Gulf states aimed at deterring Tehran's territorial claims and meeting any threat from Iraq.

Mr Velayati said more than \$40bn (£25.8bn) worth of armaments was flowing into the Arab Gulf states, the highest rate of arms purchase in the world.

"Something must be done to stop this senseless arms race," he said.

The first step towards a defensive security pact would be the creation of a regional security forum where "threat perceptions and security concerns" could be aired openly and confidence-building measures discussed.

To pave the way for a zone free of all weapons of mass destruction all states in the region should renew their commitment to renouncing nuclear weapons, join the Nuclear Non-Proliferation Treaty and ratify the United Nations convention which outlaws chemical weapons.

More controversially, Mr Velayati urged "regional provisions" to guard against cheating on nuclear, chemical and biological arms.

On conventional arms, the proposal was more tentative. Mr Velayati said possible measures included an exchange of information on weapons stocks, agreement to cut military spending and a ceiling on arms imports.

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One group, led by Germany, Denmark and the Netherlands, has been lobbying for a new protocol to be adopted at the

Control of Angola beyond Savimbi's grasp

But both sides may have reason not to sign a peace accord now, writes Nicholas Shaxson

The refugees now occupying Luanda's ruined Hotel Turismo can stand on its rocket-shattered upper floors and view the nearby headquarters of Sonangol, Angola's state oil company and the government's main financial support against the rebel National Union for the Total Independence of Angola (Unita).

The Turismo used to house senior Unita rebel officers following a May 1991 peace agreement with the ruling MPLA government. But its shattered walls now testify to the collapse of that peace. Unita's leader, Mr Jonas Savimbi, who rejected defeat in UN-sponsored elections in late 1992, led his followers back to war, leaving many of his officials stationed at the Turismo to die in the ensuing MPLA onslaught.

More than nine months of peace talks in the Zambian capital, Lusaka, have since aimed at ending Africa's longest-running war, which started soon after Angola's independence from Portugal in 1975. For more than six months, UN mediator Alioune Blondin Beye has been saying the two sides are close to a deal.

Yet some observers in Luanda dismiss the talks as nothing more than a show aimed at heading off tightened UN sanctions and at obscuring events on the battlefield.

Both sides may have reason not to sign an accord now. Government generals, advancing on the ground, could win back more land, while Unita's

demands to control the governorship of Huambo, their capital, have not been met.

The government's capture last month of key diamond areas around the north-eastern town of Cafunfo dealt a powerful blow to the rebels, who use diamonds to buy weapons. Last year some \$250m (£165m) worth of diamonds came out of Angola, mostly from the Cafunfo area.

The loss will not cut off all of Mr Savimbi's funds. The diamond fields are huge and lawless; they swarm with small-time but well-armed diggers, many of whom will remain loyal to the Unita cause.

But the defeats around Cafunfo, the loss of the northern provincial capital of Ndalatando in early May, and other government victories underline the rebels' weakness. The government thrusts into the north have been led by freshly trained Angolan counter-insurgency commandos, with help from South African and other mercenaries.

The besieged government garrison in the central highlands town of Cuito, in the heart of traditional Unita territory, surrounded, starved and pounded by heavy artillery for a year and a half, last month blasted rebel forces from positions in the town centre and scattered them into the hills.

Mr Savimbi's western cold-war supporters have now gone home. The collapsed 1991 accords were part of a wider regional deal which linked the departure of 50,000 Cuban troops, who had fought alongside the MPLA since



Jonas Savimbi rejected poll defeat

1975, with the withdrawal of South African forces from Namibia, Angola's southern neighbour. South Africa and Namibia are now ruled by traditional MPLA allies.

The government produces more than 500,000 barrels a day of oil, last year worth some \$2.75bn, more than 60 per cent of which has gone directly into the defence budget. Arms shipments from Spain, Israel, Brazil and the former Soviet Union are being unloaded openly at Luanda's airport

while military units press gang teenagers onto army trucks in the streets of the capital.

Unita's representative to the UN, Mr Gardo Muekalla, last week said he expected a government offensive on Soyo, Angola's second-most productive oil town which produced some 35,000 b/d before Unita captured it last year.

Yet Huambo still remains the key diplomatic and military prize. Unita refers to Huambo as its "Jerusalem" and sees control of the city as the key to any peace agreement. But the government says its refusal to accept a Unita governor in Huambo is "not negotiable".

Mr Savimbi appears unwilling, or unable, to concede what is demanded of him. To be denied governorship of Huambo, after nearly 20 years of civil war, may be impossible for him to sell to his generals and to his people.

He also knows the battle to control all Angola, by military or by electoral means, is beyond his grasp. He may thus think his best hope is to carve out a kingdom of his own centred on Huambo, its borders frozen in place by UN peacekeepers called in, should a peace agreement be signed.

But the Luanda government and the outside world, afraid of a *de facto* partition of Angola, want to avoid such Unita control at Huambo. UN sanctions already ban supplies of fuel and arms to the rebels and they also threaten to close down Unita bank accounts and offices abroad if the

rebel group does not give up demands to install its own governor in Huambo.

Mr Savimbi has said new sanctions will scotch the talks and the UN has repeatedly backed down from applying them. The clear knowledge on both sides that the war is unwinnable may prove enough incentive to find peace. The government knows Mr Savimbi cannot be fully defeated. Even on a shoestring budget his rebels can continue to make the countryside ungovernable.

But diplomats in Luanda also believe an agreement in Lusaka could be one of the smaller hurdles on the road to a lasting peace in Angola.

The UN is trying to work out a formula for peace involving revival of the 1991 accords. But the extent of mistrust stirred up by the disaster of those very accords has severely damaged chances of real peace. When Mr Savimbi lost elections in 1992, he used stockpiles of weapons hidden in the bush to storm back across much of Angola, overwhelming the largely demobilised government forces in town after town. Neither side will find it easy to disarm this time.

Many Unita soldiers who were in the Hotel Turismo and other parts of Luanda when the war broke out again were hunted down and killed. "They shot me in my office," Unita general Mukumba Gato, who escaped from Luanda with a bullet in his arm, said in Huambo earlier this year. "I am afraid to go back."

Climate talks end without accord

By Frances Williams

Representatives from more than 150 nations will today end a two-week meeting on the UN climate change treaty with no agreement on proposals to toughen curbs on emissions of greenhouse gases.

This is despite a widespread acceptance by governments that existing curbs are inadequate to prevent a dangerous atmospheric build-up of carbon dioxide and other gases that cause global warming. "It is clear that [present] commitments are not adequate," Mr Raul Estrada-Oyuela of Argentina, the meeting chairman, said yesterday.

The 1992 climate change convention, now ratified by 93 nations, requires developed countries to bring carbon dioxide emissions back to 1990 levels by the year 2000. But no pledges are required for post-2000, nor do developing countries yet have any obligations to cut emissions.

One group, led by Germany, Denmark and the Netherlands, has been lobbying for a new protocol to be adopted at the

first conference of the parties to the convention in Berlin next spring.

Germany's environment minister, Mr Klaus Töpler, this week proposed a 15-20 per cent cut in carbon dioxide emissions of industrialised nations by 2005.

But for a protocol to be adopted in Berlin, drafts must be circulated by September 28, six months ahead. Conference officials said the US, Britain, China, India and the petroleum-exporting countries were among those dragging their heels.

Britain and the US are said to be holding out for a satisfactory deal on "joint implementation", enabling them to meet part of their obligations by financing projects to reduce third world emissions.

The Berlin meeting must decide on the permanent home of the convention secretariat, provisionally based in Geneva. Geneva, Bonn and Montevideo have made formal offers to host the secretariat, which will have a staff of 50 and an annual budget of \$10m-\$15m.

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Airline chiefs bemoan \$10m-a-day subsidies

By Paul Betts, Aerospace Correspondent

The European Commission is consulting the European airline industry and governments on tightening existing state aid rules for airlines at a time when government subsidies to European national carriers are running at a rate of \$10m a day.

But Mr Herman De Croo, chairman of the European Commission's independent "wise men" committee for air transport, yesterday warned at a Financial Times aerospace conference that there was a risk that carriers seeking subsidies would receive their share of state aid before stricter guidelines came into force.

The "wise men" committee, which was set up by the Commission last year to draw up recommendations on the future of the European airline industry, is also due to meet at the end of this month Mr Marcelino Oreja, the new European transport commissioner, to discuss the issue.

One of the principal recommendations the committee made in its report in February was the establishment of clear guidelines on airline subsidies.

But Mr De Croo noted that, in July alone, the Commission approved state aid totalling \$7.1bn, to three airlines including TAP Air Portugal, Olympic Airways of Greece and Air France.

"This means that since

August 1991 the Commission has approved state aids to European airlines totalling \$10.35bn. That's roughly \$10m a day," he told the FT conference.

"The tragedy of it all is that when the economy is improving, air transport is on the upswing, and most big airlines are finally making money, a hard core of state-owned majors appear unable to take any medicine at all," he added.

Some European governments under political pressure from their country's labour organisations have in turn placed significant pressure on the Commission to allow state aid to airlines, Mr De Croo said.

The Commission's recent approval of state aid to a number of European airlines, especially a FF20bn (\$3.7bn) package to Air France, also came under heavy attack from senior airline industry executives at the FT conference.

Mr Robert Ayling, group managing director of British Airways, said the combined effects of liberalisation and the recession had created a two class airline industry in Europe.

The first involved airlines which have had to solve their problems on their own; the second included airlines which continued to defy the laws of economics and had enjoyed a

bumper year for subsidies.

"We don't see why Air France should be protected to the detriment of other airlines which are not allowed to dip into their taxpayers pockets," he said.

The issue of state aid was an important test for the Commission. So far, Mr Ayling said, Brussels had "dramatically failed" this test and done "lasting damage" to its reputation.

Mr Jan Stenberg, president of Scandinavian Airlines System (SAS), also said the Commission's policy on state aid would slow down the overall European air transport deregulation process.

The policy was also attacked by Mr Hans Mirka, head of international operations at American Airlines, one of the two biggest US carriers, who said the recent subsidies to Air France, TAP and Olympic equalled more than 40 per cent of the total losses on all western airline scheduled international passenger services in the past four years.

He also said several European governments had moved aggressively to restrict the ability of US airlines to fly to and beyond their markets.

If other governments failed to match the US commitment to real competition, the US would be unable to continue its pro-competitive policies in international aviation, he said. "The result will inevitably be a return to the protectionism of the past."

AT&T in Chinese telecom project

AT&T has signed a partnership agreement worth \$500m over five years to help develop advanced communications in the southern Chinese province of Guangdong. Renter reports from Hong Kong.

Under the deal with the Guangdong Province Posts and Telecommunications Administration Bureau and the Guangdong Machinery Import/Export Corporation, AT&T will provide network infrastructure equipment including advanced digital switching, optical transmission, wireless and operations systems.

The US telecommunications group will also establish a technical support centre in Guangzhou and will provide training for local managers and engineers.

AT&T said it expected to receive over \$150m in orders this year from GPTB for its 5ESS-2000 switching, synchronous digital hierarchy transmission, digital cross-connect and operations systems and related equipment.

Southern Africa and EU plan trade pact

Foreign ministers of SADC - the 11-nation Southern African Development Community which South Africa joined on Monday - will meet their European Union counterparts in Berlin next week to set out a formal basis for trade and co-operation, the German ambassador to South Africa, Mr Hans-Christian Ueberscher, said yesterday. Renter reports from Cape Town.

Seeking a glass breakthrough

Michiyo Nakamoto reflects on a US-Japanese trade dispute

The warehouse of Matsumoto Avante, Japanese glass wholesaler based in Tokyo, is not the kind of place normally to be associated with trade friction between the US and Japan.

Matsumoto is typical of small Japanese wholesale businesses, employing about 150 people and trying to make best of modest floor space in a country where property is expensive. Matsumoto, like other glass wholesalers, is the intermediary between manufacturer and user.

The future of such small wholesalers depends in part on the outcome of a US-Japan trade dispute over the flat glass market, which threatens to trigger sanctions against Japan and could change the way companies such as Matsumoto have done business for generations.

Flat glass is used mainly in the construction and automobile industries.

Negotiators from the US and Japan faced each other this week in an effort to resolve the row. It is one of the more thorny disputes among several which the two sides hope to resolve shortly.

The US has to decide whether or not to start procedures under its Super 301 trade legislation against Japan. Prospects for an agreement, however, remain slim.

The dispute over flat glass has all the ingredients of a classic US-Japan trade row.

The US accuses Japan of having an anti-competitive market dominated by a handful of large domestic makers.

It says that there is a convoluted distribution system that relies on close relationships between businessmen with stakes in the industry and others, and that this system makes the market inaccessible to foreign players.

The Japanese government has responded with a promise to take action to make life easier for outside producers.

At stake is a market worth nearly \$3bn (\$30m) in domestic sales a year, according to Japan's Ministry of International Trade and Industry.

The Japanese flat glass market, which has come under pressure in the past few years during the prolonged recession, is dominated by three manufacturers - Asahi Glass,

competitive practices and creates a barrier to free market forces. It frustrates the ambitions of foreign makers looking to expand their business in Japan. The Japanese trade ministry counters, saying the market is not as closed as it might seem. In fact, Japan has a small trade deficit with the US in flat glass products.

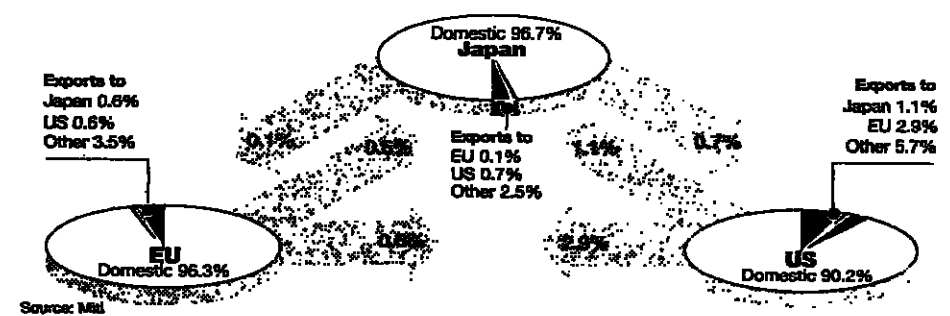
Manufacturers in Japan, the US and the European Union produce primarily for their domestic markets.

Last year, Japan imported

an estimated survey of flat glass wholesalers, conducted last December, found that the industry distribution system was dominated by small wholesalers which have limited warehouse and glass-cutting capacity, and little interest in handling foreign-made glass. The wholesalers said they found foreign imports uncompetitive in quality, delivery times and product reliability. "We buy foreign product," said a representative of Matsumoto Avante, "but we do so to

Trade in flat glass

Trilateral balances (exports as % of total domestic production, 1991)



Central Glass and Nippon Sheet Glass.

Asahi, which belongs to the Mitsubishi group, is 4.9 per cent owned by Mitsubishi Bank and 4.7 per cent by Mitsubishi Trust. Nippon Sheet Glass, a member of the Sumitomo group of companies, is 6.8 per cent owned by Sumitomo Trust, 5.4 per cent by Sumitomo Life Insurance and 4.9 per cent by Sumitomo Bank.

Central Glass, meanwhile, has close relations with the Mitsui group, with more than 11 per cent of its shares owned by Mitsui-related companies.

The US claims that a close-knit group controlling a significant market breeds anti-

competitive practices and creates a barrier to free market forces. It frustrates the ambitions of foreign makers looking to expand their business in Japan. The Japanese trade ministry counters, saying the market is not as closed as it might seem. In fact, Japan has a small trade deficit with the US in flat glass products.

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keep it in stock. We can't use it for specific contracts because delivery times are too long." Foreign companies have to make an effort if they want to increase penetration of the Japanese market, Miti says. The US companies looking to increase their share of the market have only a handful of representatives in Japan, says one Miti official. If they can get the kind of market share they already have with so little marketing effort, they must consider themselves to be doing very well. But if they want to compete with Japanese sales forces, numbered in the thousands, they have to try harder, he says.

UAE clampdown clears shops of pirate videos

Shops in the United Arab Emirates pulled pirated videos and cassettes off the shelves to abide by the UAE's first copyright law which took effect yesterday, Renter reports from Dubai.

Merchants selling fake cassette tapes, videos and software had until yesterday to abide by the law which says they must sell or rent only copyrighted products. Goods which do not have proper copyright certificates must be destroyed.

"From the first (of the month) onwards we can send out inspectors to look for these kinds of irregularities...for copyright violations," a Dubai Department of Economy official said.

Penalties include confiscation of goods, jail terms and fines of up to 10,000 dirhams (\$2,700).

One Ministry of Information official said inspectors had been sent out to check that

shops were not selling pirated goods but he did not say how many were visited.

The UAE in March became a member of the General Agreement on Tariffs and Trade, which has provisions to prevent the sale and trade of counterfeit goods.

It has also come under pressure from its western trading partners to protect trademarks and patents. The US estimates lost revenue of \$156m a year in the UAE due to copyright violations.

One video shop worker, Ali Haider, said ministry inspectors visited the shop with a warning when the law was promulgated in March. Shops were given a grace period until Thursday.

"Unfortunately we removed all the English films from the racks and are selling only Hindi films," he said, adding they were stored in a back room but they might be re-exported.

One worker at a major supermarket in Abu Dhabi said the store re-exported more than 100,000 tapes for which it did not own copyrights. He said they were currently displaying only seven original titles but more were expected next week.

"This is the last day you can buy the fake ones...at 15 dirhams (\$4). The originals are 50 dirhams (\$14)," he said.

At another branch of the same supermarket a supervisor said officials cleared the shop of 50,000 dirhams (\$14,000) worth of videos on Wednesday in preparation for the new law.

It is intended to prevent unauthorised reproduction of works of literature, art, films, video and audio tapes and software.

Juma Nabooda, Dubai's Chamber of Commerce president, said in a statement on Wednesday that the UAE would start implementing Gatt articles yesterday to coincide with the copyright law.

Peril of fragmentation over free trade pacts

David Pilling finds a UN economist warning Latin America against forming 'fortresses'

Latin America must not allow the web of free trade agreements across the region to fragment into "four or five fortresses", but should strive for greater integration, the UN Economic Commission for Latin America and the Caribbean urges.

Bilateral and multilateral accords, now numbering more than 30, could "merge into one great bloc or, on the downside, divide the region," Mr Carl Rosenthal, commission executive secretary, said in an interview.

As well as 22 bilateral accords, several sub-regional pacts have been formed recently, including the tripartite North American Free Trade Agreement of the US, Canada and Mexico; the Mercosur customs union of Argentina, Brazil, Paraguay and Uruguay; and the Group of Three, made up of Mexico, Colombia and Venezuela.

Blocs are also emerging in Central America and the Caribbean basin.

Mr Rosenthal said there was a danger that the outbreak of such accords was merely redirecting trade rather than creating it. Regional trade had grown "spectacularly" since 1980 - but it was very difficult to pinpoint cause and effect.

"We don't know how much of (the increasing trade) is due to the existence of preferential treatment, how much is due to the indirect effect of business communities becoming aware of each other, or how much would have happened anyway in the absence of a trade agreement."

What seemed certain was that nations on the margins of free trade pacts - such as Caribbean states in the case of Nafta - were likely to lose out, both in terms of trade and of investment, he said.

Even Brazil, Latin America's largest economy, had claimed that preferential agreements within Nafta, particularly those pertaining to capital goods, had resulted in lost trade worth hundreds of millions of dollars.

Multiple pacts had also created an administrative bureaucracy that militated against efficient commerce, Mr Rosenthal said. Tariffs on the same product could vary enormously, depending on the country of origin and the stage of a given treaty, most of which phased in preferential treatment.

Mr Rosenthal was not seeking to call a halt to the process. "What we're saying is: Why don't you proceed with these trade agreements in such a way as to minimise the risks of trade deviation and maximise the potential of trade creation?"

Governments could move in this direction by standardising trade agreements, using Gatt rules as their starting point, and by broadening the range of goods covered by pacts. Nations should join existing accords rather than form bilateral alliances. "It is ridiculous that there are 22 bilateral trade agreements. We would like to see them multilateralised as quickly as possible."

In this respect, Mr Rosenthal thought Chile should join Nafta, rather than sign a sepa-

rate accord with the US. He also supported Chile's initiative to become an associate member of Mercosur.

"I would like to see Chile taking on both commitments simultaneously," he said. "Conceptually, they are not saying they are going to join Nafta but turn their back on the rest of the region. They are trying to do in practice what we are preaching - that is to take on multiple commitments."

On the positive side, Mr Rosenthal thought that Latin American governments, nearly all civilian and democratically elected, shared a political vision of closer integration. "There is a more favourable environment for actually doing these things. There was a lot more rhetoric 10 or 15 years ago."

The concept of integration, in the 1980s driven by notions of import substitution, has now shifted to free-market terrain. "Governments are trying to rediscover the meaning of international integration in a more open trading system."

But the danger of economic fortresses and continental fragmentation still existed. One possibility - "not necessarily desirable" - was that political realities in the US would halt the expansion of Nafta and that Brazil's proposal for a South American free-trade area would take off. "Maybe, by 2000, you will have a fairly solid regional bloc in South America and another in North America."

"It is too early to tell where all this will lead," Mr Rosenthal said. "It could have a happy ending. On the other hand, the ending may be more complex."



If the rainforests are being destroyed at the rate of thousands of trees a minute, how can planting just a handful of seedlings make a difference?

Unless help is given, soil is exhausted very quickly by "slash and burn" farming methods. New tracts of tropical forest would then have to be cleared every two or three years.

A WWF - World Wide Fund For Nature tree nursery addresses some of the problems facing people that can force them to chop down trees.

Where hunger or poverty is the underlying cause of deforestation, we can provide fruit trees.

The villagers of Mugunga, Zaire, for example, eat papaya and mangoes from WWF trees. And rather than having to sell timber to buy other food, they can now sell the surplus fruit their nursery produces.

Where trees are chopped down for firewood, WWF and the local people can protect them by planting fast-growing varieties to form a renewable fuel source.

This is particularly valuable in the Impenetrable Forest, Uganda, where indigenous hardwoods take two hundred years to mature. The *Markhamia lotoea* trees planted by WWF and local villages can be harvested within five or six years of planting.

Where trees are chopped down to be used for construction, as in Panama and Pakistan, we supply other species that are fast-growing and easily replaced.

These tree nurseries are just part of the work we do with the people of the tropical forests.

WWF sponsors students from developing countries on an agroforestry course at UPAZ University in Costa Rica, where WWF provides technical advice on growing vegetable and grain crops.

FOR THE SAKE OF THE CHILDREN WE GAVE THEM A NURSERY.



WWF World Wide Fund For Nature (formerly World Wildlife Fund)

International Secretariat, 1196 Gland, Switzerland.

NEWS: UK

Recovery curbs financial earnings

By Philip Coggan,
Economics Correspondent

Britain's economic recovery had an unexpected side effect last year - it reduced overseas earnings from the financial services sector.

Overseas earnings from activities such as banking, insurance and share dealing fell to \$15.6bn in 1993 from \$16.1bn in 1992, according to figures released by British Invisibles, a trade group.

The main reason for the fall was an improved performance by overseas banks based in London. During the recession, bad debt problems caused many banks based in the UK to record losses, which count as a positive item

in Britain's accounts. In 1993, economic recovery in Britain meant bad debt problems were reduced. Along with improved profits from securities dealing, this meant overseas banks could report and remit surpluses to parent companies. These count as a negative item on Britain's accounts.

The result was that the UK's income from direct investment, which recorded a surplus of £1.14bn in 1992, registered a deficit of £1.68bn in 1993.

The decline in earnings from direct investment was partly offset by two improvements in the financial services accounts. Strong capital markets meant net overseas earnings of UK securities dealers rose to £3.47bn in 1993, from £2.53bn in 1992.

Secondly, underwriting at Lloyd's of London, the insurance market, having recorded losses in 1990-1992, managed a small £76m surplus in 1993. Such figures for Lloyd's are calculated on a cashflow basis, rather than on the traditional basis, under which results are not announced for three years.

British Invisibles splits the overall figures for financial services earnings into two components: services (including fees, commissions, insurance and share dealing profits), and investment income (including portfolio investment by pension funds and direct investment).

While net earnings from services increased from £3.35bn in 1992 to £3.95bn in 1993, earnings from invest-

ment fell from £7.72bn to £6.24bn over the same period.

Meanwhile, the patchy nature of Britain's recovery in consumer sentiment in the aftermath of April's tax increases was highlighted yesterday.

New credit data showed lending in the retail and new car loans sector weaker than expected in July, while home loans fell back sharply compared to a year ago.

Lending in finance houses remained relatively strong suggesting that consumers took advantage of heavy discounting in the summer sales.

The report, by Infolink, the independent credit group, showed credit in the retail sector 6.7 per cent higher in July than in July 1993.

Progress over fifth television channel for UK

By Raymond Snoddy

Britain's Independent Television Commission hopes to announce within the next two weeks the go ahead for a fifth national TV channel.

The final decision has to be taken by the members of the Commission but there are growing signs that the new channel is likely to go ahead and that, at least in theory, coverage could go as high as 70 per cent of the UK population.

If the ITC decides to go ahead, the new channel would be advertised in November with bids expected to be submitted within two or three months. A similar period would then be needed to look at the plans submitted and choose a winner by April or May 1995.

The main work now being undertaken by the Commission is to try to win permission to use more frequencies for the channel to take it beyond a minimum guaranteed coverage of around 52 per cent of the population.

There seems to be growing interest in bidding for the channel, particularly from the US and Canada, even though

some of the potentially available frequencies have been reserved for the future development of digital terrestrial television in the UK. As well as launching a fifth channel using existing technology 12 new digital terrestrial channels would be feasible.

The ITC is now believed to be looking at having bidders present business plans covering the main possibilities - around 50 per cent coverage, 60 per cent and 70 per cent coverage. This will enable the work on the channel to go ahead while the ITC seeks permission to use the maximum number of frequencies. This involves getting permission from neighbouring governments, particularly the Irish Government.

A winner could be chosen but the licence not actually awarded until the maximum possible coverage is known.

Those who have expressed interest in the channel range from NBC, and other US networks to Mr Richard Branson's Virgin Group and a consortium bringing together Time Warner of the US, M&I the UK television and financial services group and Pearson, owners of the Financial Times.

Names rap Lloyd's figures

By Richard Lapper

Lloyd's of London has come under fire from a previously supportive group of Names for allegedly overstating the problems at the insurance market.

The Association of Lloyd's Members claims in its newsletter, published today, that Lloyd's solvency rules "appear to exaggerate solvency deficiencies and minimise allowances for potential profits".

Solvency rules govern the amount of capital which Names, the individuals whose assets support Lloyd's, must deposit with the market.

The association says Lloyd's could be double-counting up to £2bn in losses from claims on

errors and omissions policies (which cover agents against negligence awards) and catas-trophic reinsurance, and suggests Names are being asked unnecessarily for the money.

"These anomalies will prevent otherwise solvent Names from continuing to underwrite... and alarm unnecessarily Names who have ceased to trade. In part they represent fictitious losses which do not exist and will never have to be paid," says an article headed "Lloyd's £2bn solvency anomaly".

Mr David Rowland, Lloyd's chairman, rejected the allegation, saying it misstates the true position and holds out false hopes to many members.

Separately, Lloyd's said it expected gross premium income to rise to £2.72bn in 1994 from £2.51bn last year, according to information in its first quarterly business report.

Meanwhile Lloyd's is to re-enter the export credit insurance market after an absence of over 70 years. Syndicate 33, managed by Hecox, a prominent agent, yesterday announced that it is to lead a new insurance facility through the Lloyd's market which will offer short-term cover against the insolvency or default of trade debtors.

Insurers at Lloyd's have been barred from underwriting risk for the private-sector market since the early 1920s.

British Gas restraint lifted

By Robert Corzine

British Gas was freed yesterday from regulatory restraints which have allowed its competitors to carve out an 84 per cent share of the lucrative £1.1bn a year market for large industrial customers.

Ogas, the gas industry regulator, decided to suspend the requirement that British Gas sell to large industrial and commercial customers using 25,000 therms a year or more according to published, non-discriminatory price schedules. The suspension will run for

six months from October 1, during which time Ogas will review the entire gas contract market above 2,500 therms.

The requirement lifted yesterday was imposed in 1988 as part of the government's efforts to introduce competition into the gas market. Independent gas companies, operating with minimal overheads and using British Gas pipelines, were quickly able to carve out a large market share by offering discounts of 10 per cent-20 per cent below the British Gas prices. Ogas said the suspension depended upon

British Gas maintaining a "non-discriminatory" pricing policy. It said evidence of the company's selling gas at "broadly below cost" or using predatory pricing to regain market share could see a re-imposition of price schedules.

Mr Norman Ellis, managing director of Kinetica, a joint venture between PowerGen and the US oil company Conoco, said Ogas was "short-sighted" to allow British Gas to compete freely in the firm commercial market while independents are still barred from the residential market.

Iraq arms inquiry report is delayed

By John Mason,
Law Courts Correspondent

The publication of Lord Justice Scott's report into the sale of defence equipment to Iraq has been delayed until early next year, it was announced yesterday.

The need to gather and assess additional evidence has meant the postponing of the report's release, originally scheduled for this autumn, a statement from the inquiry team said yesterday.

Lord Justice Scott has also decided to question two witnesses from the Secret Intelligence Service or SIS, it was disclosed.

One of the witnesses is a serving SIS officer, the other a former officer with the service. The judge's decision to question them face to face follows extensive recent requests to both witnesses to supply further written evidence.

These requests followed evidence given to the inquiry by other witnesses about the role played by SIS when defence-related equipment was exported to Iraq.

The two witnesses will be questioned about SIS's involvement in the consideration of granting export licences for defence equipment - in particular those awarded to Matrix Churchill, the Midlands engineering company, for the export of "dual-use" machine tools.

The two SIS witnesses will give evidence in closed sessions later this month. The exact dates have not been released "for reasons of national security and for the personal safety of the officers concerned", said the statement.

Inquiry secretary Mr Christopher Mitchell said: "Lord Justice Scott has already written a large part of the report and continues to write while the investigative work goes on."

"Requests for evidence and for information are still being sent out. The need to gather and assess additional evidence has inevitably extended the timetable."

"The judge hopes to have completed the draft by the end of the year and he will then give witnesses whom he proposes to criticise an opportunity to comment before the report is finalised."

Competition cuts cost of calls

BT is being forced to limit its prices, writes Andrew Adonis

It is not just British Telecom's hype: the telephone really is getting steadily cheaper to use, particularly for business callers who clock up long-distance and international minutes. And prices are set to fall further as regulation and competition continue to bite.

This week's price cuts from BT mean that UK long-distance calls are barely a third of the cost a decade ago, allowing for inflation. From the end of this month a three-minute weekday morning call from London to Hereford will cost 30p. In January this year it was 50p.

Not all prices have come down. Line rental charges have risen by 10 per cent in real terms over the past decade, and will continue rising. Ofcom, the telecoms regulator, supports BT's efforts to reduce its deficit on maintaining basic line connections.

But it has forced the company to bring its call charges down sharply, reflecting the falling cost of delivering calls as new technology slashes overheads. Ofcom's price cap obliges BT to reduce its total charges by 7.5 per cent a year, once an increase for inflation has been allowed for.

In round figures that equals price cuts worth £500m, with £100m recouped from a 2 per cent real-terms increase in line rental charges. BT is free to target the cuts as it chooses.

Mr Michael Hopper, BT's managing director, says three factors determine its price-cutting strategy. Ideally, cuts will stimulate usage; they ought to give BT "the most favourable stance against the competition"; and they should

"do something to spark the imagination".

The abolition of the morning peak rate earlier this year met the last two criteria. This week's abolition of the higher long-distance rate at a cost of £244m over a full year was firmly directed at the first and second - particularly at competition in the business market.

Mercury, BT's main competitor, has a quarter of the large business market and about two-thirds of the City of London's outgoing traffic. But it is increasingly hampered by BT's falling prices on one hand, and by new entrants pursuing its larger customers on the other.

The price gap between BT and Mercury is steadily narrowing in the business market (see graph). For many large businesses the saving is down to 6 per cent or less for UK traffic.

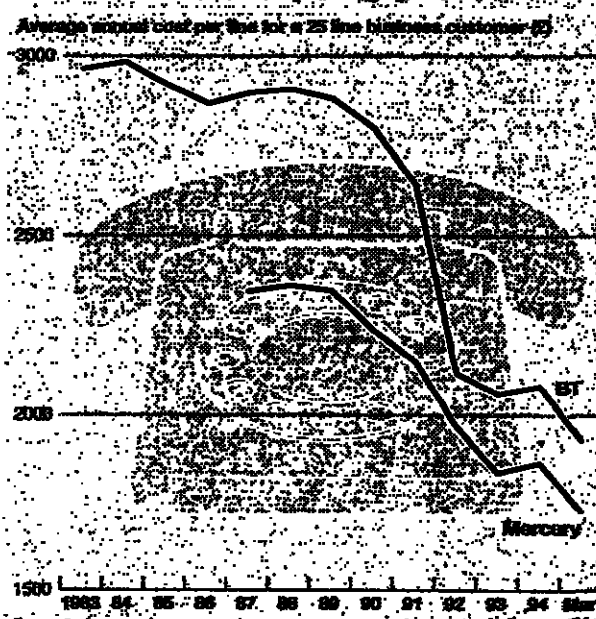
Mr Terry Rhodes, Mercury's competition director, says his company has to break out of the "BT-but-cheaper" syndrome. He believes the message still has strong appeal to small and medium-sized businesses - those with annual telecoms bills under £150,000.

But Mercury's efforts are shifting to building "brand loyalty" through added-value business services such as network management and improved data telecoms links.

A host of new operators has moved into the City, the UK's telecoms honey-pot, and targeting Mercury first and foremost.

The most successful to date appears to be Worldcom, a US group which set up in London in 1991. Worldcom re-sells

BT cuts the business price gap



international lines to big business at a discount. It boasts 250 business customers, and claims to have covered nearly 3 per cent of the UK's outgoing international telecoms traffic.

"Our marketing is based on 10 to 15 per cent off Mercury's best business price," says Mr David Hardwick, managing director.

Worldcom is also about to enter the small and medium-size business market, and plans to offer a long-distance UK service in addition to its international service, inter-connecting to existing long-distance networks.

MFS, another US group, is already active in the UK long-distance business. Launched in March this year, MFS offers free line rental to customers with usage bills of

£500 or more per line per year. Its fibre network covers most of the City and Docklands, and is being built out to Southwark and Westminster.

The company is considering a plan to extend the network to the Thames Valley, putting MFS within reach of 35 per cent of the UK's large telecoms users.

Long-distance telecoms capacity is now abundant. There is plenty of scope for re-sellers to expand. In addition to BT and Mercury, Energis, a subsidiary of the National Grid which has erected a long-distance network on electricity pylons, is opening for business. The regional electricity companies covering Yorkshire and Manchester are building their own networks, and targeting business users.

Britain in brief



Man held in shooting of accountant

One man was being held in Istanbul prison yesterday and an arrest warrant had been issued for two others in connection with the shooting last month of a UK accountant working for Coopers & Lybrand, the court-appointed administrators of Polly Peck International, the UK fruit to electronics group.

Islam Elma was being held at Beyrampasa prison under a court order pending trial related to the shooting of Mr David Adams, who received five gunshot wounds to the leg.

Mr Elma, 21, reportedly told police he had mistaken Mr Adams for Mr Chris Howells, the accountant directly involved in trying to recover the local PPI assets now in dispute with the former PPI chairman Mr Asif Nadeem.

Last night, lawyers working for the administrators had said to be provided with copies of the court proceedings. But local newspapers reported Mr Elma and two others had been offered £12,500 (£5,000) and shares in Vestel Electronics, PPI's listed Istanbul consumer electronics subsidiary, to shoot the Coopers accountant.

Mr Elma is said to have confessed to the attack after being apprehended in the aftermath of another shooting, according to the newspaper reports.

ABB to shed jobs in York

ABB Transportation's York train and tram-building works is to shed 289 jobs, the company said yesterday.

The redundancies follow a shortage of orders at the plant, which has no work beyond October next year.

ABB Transportation, part of Asea Brown Boveri, said it could see a long-term future but was facing a short-term crisis. Mr Bo Sodersten, managing director and chief executive, said it was essential that new orders were won quickly.

Mr Bill Beaman, the plant's engineering and electrical union convenor, said redundancies had been expected, but not so many. ABB said it was chasing orders under the government's private finance initiative.

Euro-post for Labour chief

Mr Tony Blair, leader of Britain's opposition Labour party, yesterday announced that he is to replace the party's long-standing general secretary Mr Larry Whitty.

Mr Whitty, who has held the post for nine years, will be moved to the newly-created position of European Co-ordinator with responsibility for liaising with the party's Euro-MPs.

The appointment will give Mr Blair the opportunity to get a candidate of his choice installed as head of the party's organisation as part of a wider shake-up at the party's Walworth Road headquarters.

BA staff in strike vote

British Airways cabin crew in Manchester and Birmingham have voted for strike action in a dispute over holidays and allowances.

Three-quarters of the 565 cabin crew members of the TGWU transport union returned their papers in the ballot. Of those, 88 per cent supported strike action. Meetings are to be held early next week to try to resolve the dispute.

Meanwhile talks are continuing in an effort to resolve a pay dispute at Britannia Airways.

Littlewoods sign £14m deal for FA Cup

By Neil Buckley

Littlewoods Pools yesterday became the first sponsor of the 123-year old English Football Association Cup, in a deal worth £14m.

Together with investment in support activities, Littlewoods is committing a total of £20m over four years - the biggest-ever sports sponsorship package. It will have its name attached not only to the prestigious FA Cup, but to the FA Charity Shield - for which the previous season's cup winners and league champions play at the start of each season. The FA Cup will not be renamed after the company, but will be known as the

"FA Cup, sponsored by Littlewoods". The Charity Shield will be known as the "Littlewoods Pools FA Charity Shield".

The FA launched a marketing programme in June combining the commercial rights of the FA and Wembley Stadium, called Total Football. This consisting of a number of sponsorship packages, capable of accommodating up to 12 companies.

Companies joining the programme were given the opportunity to upgrade their package to become "presenting sponsor" of the FA Cup. The FA selected Littlewoods as the "ideal candidate".

Mr Trevor Philips, the FA's commercial director, said the decision to seek sponsorship of the cup "was not taken lightly".

"It would only have happened with the right company. I cannot think of a company that is a more integral part of football, and certainly none has made a greater financial contribution."

Littlewoods, the family-owned football pools and retailing business, has previously sponsored the League Cup, now sponsored by Coca-Cola.

Mr Barry Dale, Littlewoods group chief executive, said there was a "clear and mutually beneficial link" between Littlewoods and football.

Littlewoods Pools' move is partly an attempt to bolster its position in the face of competition from the National Lottery, due to be launched later this year.

"Sponsoring the Cup will enable us to harness the benefits of our overall investments in football in promoting our business in these more competitive times," Mr Dale said.

The deal is also a boost for the FA, whose finances have been strained by England's failure to qualify for this year's World Cup finals, and two years without competitive matches before hosting the 1996 European Championship.

Business

Siege mental
takes a grip
on Protesta

Business hopes for up to 30,000 jobs

By Tim Coone in Dublin

The IRA ceasefire has injected a mood of cautious optimism into Northern Ireland's business community, but has also triggered warnings that economic support to the province must be maintained to underpin the hoped-for peace.

Business leaders and economists in Belfast estimate that a lasting peace could bring between 15,000 and 30,000 new jobs to the province over the next five years, but this would be partially offset by job losses in security-related employment.

One other benefit from a peace settlement, mentioned by a number of business executives yesterday, would be that companies would find it easier to attract senior managers to the province.

Mr Nigel Smyth, the director of the Confederation of British Industry (Northern Ireland), said if the ceasefire proved to be permanent, "there

will be a lot of business opportunities in the medium and long term".

He thought job growth through inward investment would quadruple, from about 500 per year to 2,000 over a two-to-three-year period, while an additional 10,000 jobs could be created in the tourist industry.

"On a per capita basis, tourist numbers here are presently a third of those in the republic and a quarter of those in Scotland," he said.

Mr Michael Smyth, an economist at the University of Ulster at Jordanstown, said the CBI figures erred on the conservative side. Tourism contributes 1.5 per cent to GDP in the province, compared with 7 per cent in the republic, so catching up with the south could create 20,000-30,000 tourism jobs in Northern Ireland. Unemployment is currently 98,000 - 13.1 per cent of the workforce.

Stena Sealink, one of the main ferry operators across the Irish Sea to Bel-

Economy

fast and Larne, said interest in Ireland as a holiday destination had grown, "but interest is weighted very much towards the south because of the troubles in the north. Clearly, a permanent end to the violence would do no end of good."

The CBI said a climate of peace would allow manufacturing and service companies to focus their marketing on quality production. Mr Nigel Smyth said Northern Ireland businesses had one of the best records in Europe for quality awards, but that had been overshadowed by the province's image problem.

The downside of the peace will be the inevitable cuts in the security forces and security-related industries. Reductions in policing levels and the prison population, and eased security in shops, offices and factories will mean less overtime, job losses, and less money going into the economy -

the loss could be as much as £300m to £400m per year.

The more pessimistic forecasts envisage job losses in the region of 20,000, a figure calculated by Dr Graham Gudgin of the Northern Ireland Economic Research Council. He said that over four to five years the province's economy "will be lucky to break even on jobs". Mr Smyth of UUI said the number of job losses was more likely to be around 10,000 to 12,000, but he admitted there could be further indirect losses.

Mr Michael Smyth said the transition to a peacetime economy would have to be managed very carefully. The government would be "extremely foolish if it were to send any savings made through an end to the violence straight back to the Treasury. Otherwise you could see a rise in unemployment rather than a fall."

The CBI says any security-related savings and exchequer benefits

achieved through economic growth "should be redirected towards wealth creation and training".

The Department of Economic Development in Belfast acknowledged that there was a danger of short-term job losses. "But any change will not be a jolt but gradual, and will be balanced by new jobs over a period. The economic development budget is very substantial at £400m and is expected to remain that way."

It said the Treasury would decide whether additional resources through savings on security could be redirected towards economic development.

Mr Clem Parkes, chief executive of CV Carpets which is based in the north-east of the province, said: "It is always difficult to get managers and specialists that we cannot find here to relocate from Britain. That will become much easier. And our experience is that when we do get them here they don't want to leave."



Republicans celebrate the start of the IRA ceasefire after midnight yesterday on the streets of west Belfast. Their banner tells British troops to 'Get out of my sight'.

Siege mentality takes a grip on Protestants

By William Lewis

Hoarding of goods had begun on the Shankill Road yesterday. Shops said that candles, gas lighters and basic foods were in demand all day as many Protestants made provision for a breakdown in law and order.

"The siege mentality is taking hold down here," one shopkeeper said. "I'm calling it the peace dividend."

Fear was evident yesterday in the Shankill Road and other working-class unionist strongholds - fear that the IRA ceasefire followed concessions made by the British government and fear that the IRA will not hand over its guns, enabling the violence to continue.

The talk along the Shankill yesterday was of a civil war in Ulster being "the obvious outcome" if the British government has traded in the unionist veto for the IRA ceasefire.

"People have reacted very badly," said Mr Bob Stoker, an Ulster Unionist party activist who lives near Sandy Row, another Protestant area.

"They have not taken it calmly at all. There has been a great run on food stores and people have sold out of gas cookers, candles and paraffin lamps," he said.

"People are prepared to wait and see for a short while but while they do so they are getting prepared," Mr Stoker said. "Ordinary people down here will not be put in a situation where they can be starved into defeat."

Tension in Protestant areas of inner-city Belfast was heightened following a raid by the Royal Ulster Constabulary on two houses last night. According to the Rev Eric Smyth, a councillor for the hardline Democratic Unionist party, the police smashed down the door of one house in spite of it being empty.

"Temper is very high at the moment," he said. "The feeling is very bad." Mr Smyth said concerns developed after part of yesterday's Sinn Féin celebration procession involving more than 50 cars, taunted and threw sticks at children playing in a Protestant area

Loyalists

near to the Catholic Falls Road. Suspicion is also rife. The Rev Brian Moore, minister at the West Kirk Presbyterian church on the Shankill Road, talked of disaster if concessions had been made by the British government.

"If that does emerge then that's another ball game altogether," he said. "That would be a very serious situation which we would find very difficult to control."

"We have longed for peace. But I suppose there is a suspicion in the community that there may be a hidden agenda with the government and the IRA, that a deal has been done," Mr Moore said there was "disillusionment with our political representatives," but "hopes loyalist paramilitaries will assist the peace process".

Mr David Ervine, a leading member of the Progressive Unionist party, which is thought to have insight into the UVF, the loyalist paramilitary organisation, thinks that it will aid the peace process - but only when it is clear no deal has been done.

"If the government can assuage the fears of unionists I would expect an immediate response," he said. He believes this would involve a ceasefire announcement by the main loyalist terrorist groups. "If assurances are given the loyalist weapons will be laid down, and laid down quickly," Mr Ervine said.

Other unionists were willing to look on the bright side. Mr Michael McGimpsey, an Ulster Unionist party councillor in Belfast, believed assurances from the British government that no deals had been done.

Mr McGimpsey believed that the *cul de sac* argument may be the real reason the IRA called a ceasefire. "They may finally have realised that their tactics were not getting them anywhere," he said.

But he also warned: "If people believe the IRA have stopped because they have got something then we are in for very difficult time."

Bomb targets warned not to drop their guard

By Richard Lapper

Insurers, hit by heavy claims from the IRA's mainland bombing campaign, yesterday welcomed this week's ceasefire but insisted that new arrangements for terrorism insurance and security precautions should remain in place.

Insurers have been hardest hit by the two IRA bombs in the City. Claims from the Baltic exchange bomb in April 1992 amounted to £200m, including about £100m for interruption to business. Claims from the Bishopsgate bomb, a year later, totalled £500m, with about £150m for business interruption. Losses from other smaller

Insurers

bombs amount to less than £10m, said Mr Tony Baker, deputy director-general of the Association of British Insurers.

In Northern Ireland the government has paid more than £620m since the late 1960s to compensate property owners for damage. Losses rose to £50m in 1976-77 before falling steadily to £15m in 1986-87, but the bill in 1993-92 was £28m.

After the London bombs, insurers withdrew cover for terrorism from standard commercial policies. It is offered as a separate policy, with insurance companies covering their own exposures through Pool Re, a company owned by the

insurance industry and backed by the government.

The decision by Pool Re to charge more to businesses in central London and other areas judged to be terrorist targets than those in less vulnerable areas caused considerable controversy.

Mr Baker said these problems had been overcome by insurers reducing some expensive premiums in return for the installation or adoption of security precautions. Mr Baker said changes were not likely for at least a year.

Mr Baker argued for the maintenance of security, such as the restrictions of traffic in the City, and said there had to be a degree of caution.

Peace is still not guaranteed

By Michael Cassell

Renewed threats of civil war made by Ulster's loyalist paramilitaries provide a grim reminder that an end to violence by the IRA gives no guarantee of peace in the province.

For, though the loyalists say they also want an end to 25 years of bloodshed, they believe that almost any deal on Ulster's future acceptable to republicans must undermine unionist interests.

Those interests, they warn, will be defended with a determination and military skill equal to anything shown by the IRA over the past 25 years.

Those claims may be exaggerated, but their ultimate potential to wage war will depend on the extent of support from a loyalist community feeling increasingly cornered.

The fear, particularly in working-class areas, is that unionists - whatever the assurances of Westminster - are close to being sold out.

The logic, in the minds of the loyalist paramilitaries, is that the IRA, with minimal support, has pushed its cause to the top of the political agenda using violence, if the strategy has worked for them then, the argument goes, it will work to protect the majority loyal to the Union.

Ministers and politicians on all sides will have to work hard to set minds at rest and convince the unionist community

that, if the IRA reaches the negotiating table, it will do so on the basis of the Downing Street declaration alone and any agreement will fully safeguard the union's future.

Most unionists have no more time for the loyalist gunmen than they have for the IRA but that could change if, in the

Most unionists have no more time for the loyalist gunmen than they have for the IRA, but that could change if the sands appear to be shifting under Ulster's position

weeks ahead, the sands appear to be shifting under Ulster's position in the UK.

Unionist politicians will play a critical role in determining the level of support a nervous community might offer extremists. None of them condones violence but, in recent months, there have been some attempts to rationalise paramilitaries' actions in the face of the "republican threat".

Paramilitaries

Loyalist extremists believe they are well-placed to exploit new uncertainties and old anxieties, and say they are able to launch a counter-offensive which will render unworkable any political accommodation with the republicans.

With loyalist action against the IRA and Sinn Féin cited as a reason behind the switch in republican strategy, renewed attempts to draw the IRA back into armed conflict can be expected.

The illegal Ulster Defence Association, the largest loyalist paramilitary organisation, which mounts attacks in the name of the Ulster Freedom Fighters, has traditionally portrayed itself as intent upon reacting only to IRA atrocities.

But since the start of this year, the UDA claims it has tried to preserve the union. Failing that, the organisation - which said it would ignore the ceasefire - wants to create an independent northern Ireland.

After the three-day IRA ceasefire earlier this year, the UDA warned it could extend activities to the Irish republic unless constitutional claims to the north were dropped. Even if they were, an end to UDA violence would depend on other elements of any deal.

But for some years the UDA has not attracted the same levels of support it enjoyed in the early 1970s. In 1974, it helped

Media curbs

Sinn Féin voice ban may soon be lifted

By David Owen

There were growing signs at Westminster yesterday that the government could sanction an early lifting of the broadcasting ban on the voices of Sinn Féin representatives if it was convinced the IRA had ended violence for good.

As both leading opposition parties said they would welcome the lifting of restrictions, Mr Michael Mates, a former Northern Ireland minister, indicated that he too thought an ending of the ban would be helpful.

Mr Mates, Tory MP for Hampshire East, said he thought the move would be "high on the list" after the announcement of a permanent cessation of IRA violence.

The only reason the voices of Sinn Féin, the IRA's political wing, were banned from the airwaves was because they supported violence, Mr Mates said. "If there is no violence, that stricture goes away." Removing the ban was "a relatively simple thing the government could do relatively soon - but I think we will want one or two signs yet."

Sir Patrick Mayhew, the Northern Ireland secretary, is one of a number of cabinet ministers known to favour an end to the ban on the grounds that it has become counter-productive and tends to expose the government to criticism.

But there are fears that such a move, if not handled sensitively, could provoke anger among unionists and unionist sympathisers on the Tory back benches.

One prominent unionist supporter said yesterday that he did not think lifting the ban would provoke a strong reaction under the circumstances now prevailing.

But Mr David Trimble, the Ulster Unionist MP for Upper Bann, indicated that he did not think the time for lifting the ban had arrived.

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TECHNOLOGY

Advances in surgery mean many eye problems are now treatable, writes Andrew Derrington

A vision for the future

The idea of surgeons manipulating the shape of the eye to correct faulty vision would have been unthinkable to most people a few years ago. But today - with the help of laser incisions, special materials and new techniques - defective eyesight can be improved with a surgical precision that only the latest technology can provide.

For many, this means a visit to the optician for a new pair of spectacles or contact lenses will no longer be necessary, or not so often. Surgeons can break up the lenses of patients with poor vision and replace them with artificial ones. The profile of the cornea can be altered and tests are being carried out on injectable lenses made of gels.

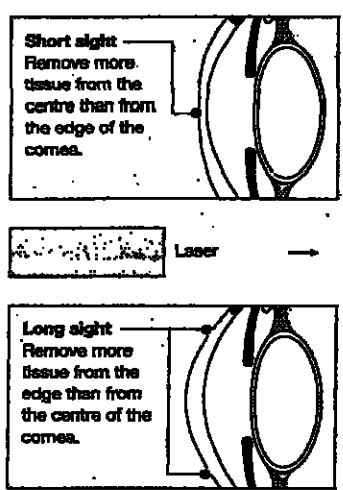
One of the most common eye defects, especially in old people, is the cataract in which the lens becomes clouded. It is more common in old people and affects 80 per cent of over 65s in the UK, according to Arthur Steele, a surgeon at Moorfields Eye Hospital. The causes are unknown, but exposure to ultraviolet light and poor diet may be important.

To restore the vision of an eye with a cataract, the cloudy lens must be removed and may be replaced by a plastic implant. But early implants caused problems. The Perspex (PMMA) lenses were large and heavy. A long incision, weakening the eye and changing its shape as it heals, is needed to insert them and their weight makes them tend to move around. Cells tend to stick to the PMMA lenses, making the implant cloudy and the implant is rigid, so the eye cannot accommodate (focus) on near objects.

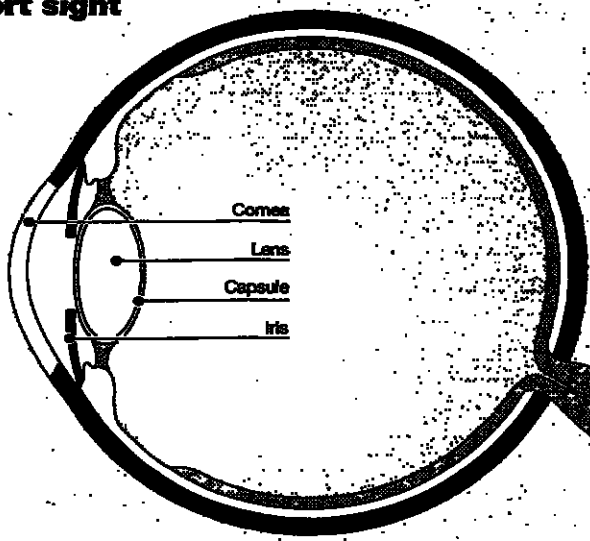
Yet all these problems, except the lack of accommodation, have been solved by advances in equipment and techniques. The first step towards reducing incision size was to break the lens up before extracting it. The problem was to hit the lens hard enough, without damaging anything else inside the eye. In the technique known as phacoemulsification, a vibrating ultrasonic probe breaks the lens up and removes it by suction.

The latest instruments remove the lens through a 1.5mm incision. The problem, however, is that the implant replacing the lens has to pass through the incision and be big enough to sit snugly in the lens capsule holding it in the correct

How to correct long and short sight



Graphic: Russell Stewart



position inside the eye. Extracting the old lens through a pinhole is no use if the incision has to be enlarged to insert a big implant.

The development of foldable lenses alleviates this problem. PMMA is rigid, but small lenses can be made with folding extensions (haptics). After insertion the haptics are unfolded to keep the lens in the centre of the capsule. These lenses can be inserted through a 5mm incision.

Even more advanced are lenses that can "remember" their unfolded shape, and resume it after insertion. Made of newer plastics, such as silicone or acrylic, they can be folded or rolled up and inserted through

even smaller incisions. Lens insertions through incisions as small as 1.5 mm have been reported. But these techniques are experimental and need to be carefully evaluated. One potential problem is that silicone lenses may unfold violently and damage the eye.

New lens materials also have other advantages. Cells do not stick to them, so the lenses stay cleaner. Acrylic lenses can be made very thin, because the plastic has a high refractive index - it bends light sharply, allowing implants of very high optical quality to be designed.

However, even the latest implants cannot change focus. In the normal eye, the lens capsule is under ten-

sion and flattens the lens by squeezing it. The eye focuses on near objects by relaxing the capsule, allowing the lens to curve.

Researchers in several countries are searching for a substance that will form a lens that fills the capsule, corrects the focus of the eye and is elastic enough to permit accommodation, or close-up focusing.

Yet even without accommodation, vision with a rigid implant can be improved by a new technique. The profile of the cornea is measured before surgery and the size and shape of the surgical incision are then planned so that the eye heals with a corneal profile giving a pre-

cisely calculated degree of astigmatism (difference in focus for lines of different angles).

According to Julian Stevens, a London eye surgeon who uses a computer-controlled laser to make the incisions, the desired astigmatism leaves the cornea slightly more curved in the vertical direction than in the horizontal direction. The subjective effect is that clear vision is obtained except for the very closest work.

For patients with simpler vision problems surgeons can also modify the profile of the cornea, avoiding the need for spectacles or contact lenses. The profile must be made flatter to correct myopia (short sight) or more curved to correct hypermetropia (long sight).

One such method is radial keratotomy, in which a star-shaped incision flattens the cornea. The success of this technique is highly dependent on the surgeon's skill.

A newer, and rapidly evolving, technique - entirely driven by technological changes, many derived from military applications - is photorefractive keratectomy (PRK). A computer-controlled laser etches tissue from the corneal surface to change its shape. PRK is an area of extremely rapid development. Companies in the US, Europe, Japan and Russia are developing more flexible ways of controlling the lasers so that problems requiring different patterns of tissue removal can be treated. The change in profile is produced by varying the amount of tissue removed from different parts of the surface.

Long-sightedness can now be treated using a moving laser beam. The first results are available from a system which uses a moving slit, developed by Aeschulap-Meditech of Germany.

To correct hypermetropia with a scanning laser beam, the beam intensity or the number of pulses can be controlled to etch more tissue from the edge than from the centre, thus steepening the corneal curvature. The approach can be extended, modifying the shape, intensity and number of pulses to produce any desired change in the corneal profile. Thus astigmatism and irregularities in the corneal surface can be corrected.

With such rapid advances in eye technology, patients will one day find a visit to the eye-surgeon as routine and beneficial as a trip to the high street optician.

Towards a cure for blindness

Work on a protein that stimulates blood vessel formation may lead to a drug to prevent blindness. The protein, vascular endothelial growth factor, controls the laying down of blood vessels during normal development.

VEGF may also cause abnormal blood vessel proliferation in diabetic retinopathy, the commonest cause of blindness in the UK workforce. The abnormal blood vessels prevent light reaching the sensitive part of the eye and are fragile, often causing further damage by bleeding. The British Diabetic

Association estimates this type of blindness affects between 7,000 and 14,000 people in the UK annually. With early detection, laser treatment is possible in 70 per cent of cases.

The hope of a drug treatment rests on three sets of results from researchers in Israel, Australia and the US. The Israeli team first identified VEGF and developed sensitive tests for it while working on ways of preventing the blood vessel formation (and hence growth) in human tumours.

They then showed, in collaboration with Jonathan Stone of Sydney

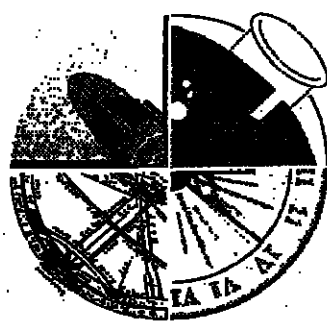
University, that VEGF is the protein that regulates the formation of blood vessels in the developing rat retina.

The third piece of the jigsaw is that high levels of VEGF are found in the eyes of patients with proliferative diabetic retinopathy.

The next step is to develop a drug that inhibits the production of VEGF, and to test if it prevents the unwanted proliferation of blood vessels in the retina.

According to Stone: "Much is known about the gene and the protein and the possibility of specific inhibitors is real."

Worth Watching - Vanessa Houlder



A purer way with seawater

Few arid countries can justify the cost of using water purified through conventional desalination techniques for agriculture. Light Works, a London-based company sponsored by the EC, has addressed this problem by developing what it believes is a cost-effective system for producing crops and pure water in hot coastal regions.

Its prototype greenhouse, which has been built on Tenerife, uses surplus heat to evaporate seawater, which is purified by being passed through a heat exchanger cooled by cold sea water. It yields sufficient surplus water to water the crops within the greenhouse and irrigate the immediate surrounding area.

Light Works: UK, tel 071 249 3627; fax 071 254 0306

Locking out prying fingers

Valuable packages are usually locked to ensure they are not tampered with. Encrypta Electronics, a UK security company, together with Harcor Security, a division of Australia, have developed a padlock that includes an electronic sealing system.

The Nanolock generates a four-digit random number on a built-in liquid crystal display every time the lock is closed. It also displays the length of time since the padlock was closed, allowing the user to determine the precise time of an unauthorised entry.

Encrypta Electronics: UK, tel 0633 265551; fax 0633 265667

PCs move into telephone sales

Power-dialling equipment is widely used by telephone salesforces to trawl through a

database of numbers, logging successful calls and returning to numbers later if they are engaged. As a cheaper alternative to buying dedicated power-dialling equipment, Expos Software Solutions, a UK software company, has launched a package called EasySpeak which allows personal computers to be used as power-diallers. The package, which runs on PCs using Windows software, costs £295.

Expos: UK, tel 0628 533143; fax 0628 533145

Improved method to weld copper

Copper's ability to resist corrosion has made it one of the front-runners in the search to find a suitable material in which to store nuclear waste under ground. The snag is that copper is difficult to weld because of its high thermal conductivity.

The Welding Institute, a Cambridge-based research group which is working on a prototype copper canister for the Swedish Nuclear Fuel & Waste Management Company, believes the solution lies with the use of reduced pressure electron beam welding. It uses a 100kW electron beam, which is sufficiently intense to penetrate the 50mm-thick copper canister. The steel-lined canisters produced by this process are expected to last more than 100,000 years.

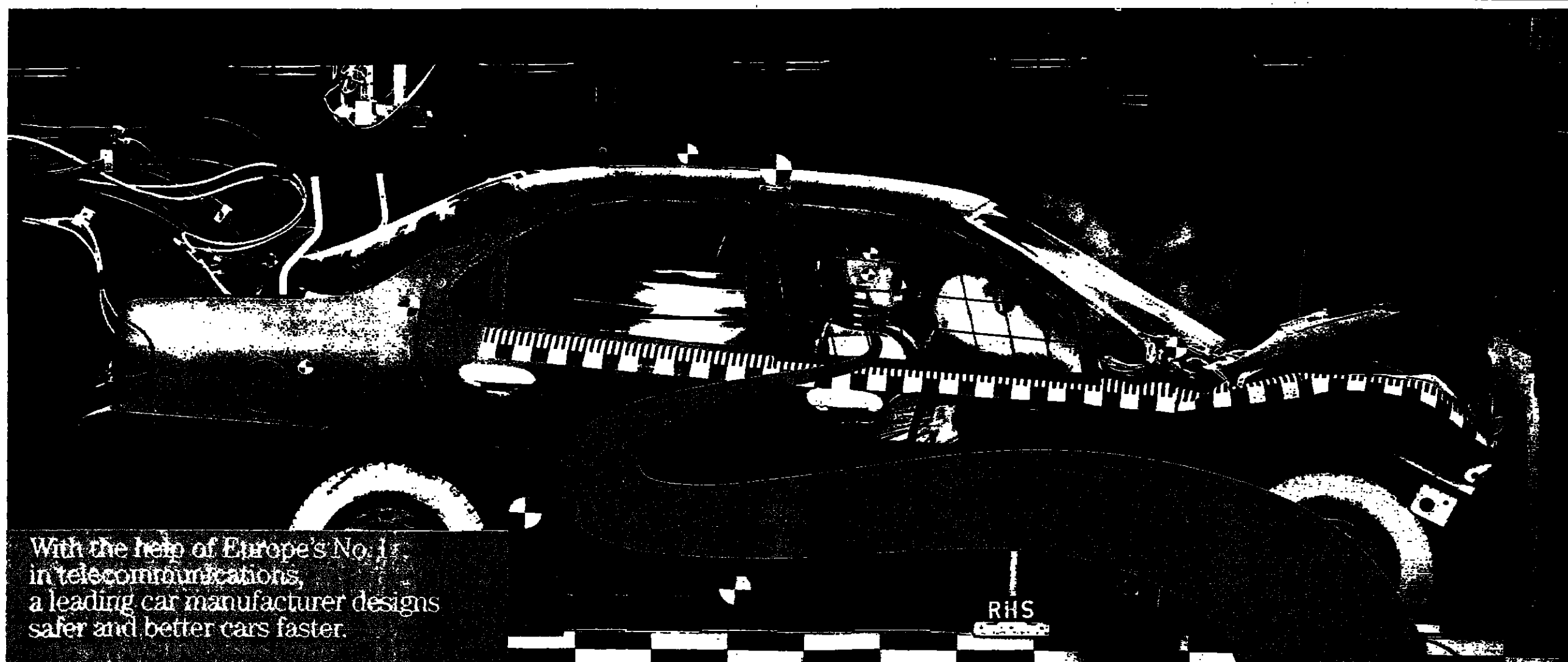
The Welding Institute: UK, tel 0223 891162; fax 0223 892588

Cancer cells under the microscope

Scientists working at the Massachusetts Institute of Technology have discovered how two tumour-suppressor genes, called Rb and p53, co-operate to prevent cancer in mice, writes Andrew Derrington.

Their results, described in this week's issue of the journal Nature, throw light on the way the body controls the destruction of irreparably damaged cells. The Rb protein acts during the development of the eye in the embryo. It stops cells from dividing and causes them to differentiate into their adult forms. If it is absent, the product of the p53 gene prevents the cells from proliferating by inducing programmed cell death.

Tyler Jacks, MIT: US, tel 617 253 0262; fax 617 253 3883



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to create a cost-efficient communications system. One feature is its ability to transmit the results and data of computer-simulated crash tests to and from the company's research and development centres based in Cologne (Germany), Dunton (England), and Ford's supercomputer in Detroit (USA). Compared to real-life testing, this dramatically cuts down the time it takes to acquire vital design information.

To successfully complete this project, Telekom undertook all negotiations with the various international telecommunications authorities, created a special project team to investigate all project-related

requirements and coordinated all the transmission channels to suit the customer's demands.

WAN is now an effective and competitive business tool in Ford operations. It has not only cut communications costs but has also significantly streamlined internal communications. Optimal, customer-specific solutions are a Telekom hallmark. These include one-stop shopping, single-end billing, network management and comprehensive consultancy services.

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A question of motivation

Tim Dickson

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MANAGEMENT

A question of motivation

Tim Dickson on how to keep up staff morale amid job losses

How do you manage a business whose 340 employees will mostly be made redundant in two years' time? That is the challenge facing Keith Greenough, chief executive of Mortgage Express, the TSB's centralised mortgage lending subsidiary.

A casualty of the deep recession in the UK housing market, North London-based Mortgage Express is winding down its "book" ahead of the transfer of its functions and remaining assets to TSB branches in 1996. At that point, all but a few will lose their jobs.

Greenough acknowledges that the health of the business is heavily influenced by macroeconomic factors - the six months to April, for example, saw a turnaround from losses of £15m to profits of £19m as the bad debt charge tumbled - but he insists that the efforts of staff can make a significant impact.

Employee involvement, training and better communication are on the Mortgage Express agenda, at least as much as they would be at any enlightened financial services company with a more secure future.

Morale was especially low when Greenough and his team arrived in 1991, amid rumours that the company was likely to be sold and following a decision to relocate the mortgage administration centre to Glasgow (subsequently reversed). "One of the first things we noticed was a lack of trust," explains Peter Taylor, director of human resources and quality.

An important part of the re-motivation strategy has been the development of two-way communication channels. Particular emphasis was placed on introducing a staff opinion survey that adequately reflected the needs of the company. Other companies (including TSB, Bank Xerox and Federal Express) were benchmarked and "metaphorically", a technique involving different groups of staff in confidential brainstorming sessions, was used. The fact that 78 per cent of employees responded to the subsequent questionnaire against a 50 per cent response rate to earlier polls conducted for the company by

Mori, is an indication that the planning paid off. There are now about half a dozen cross-functional teams working on different issues, including finding a fairer system of staff appraisal.

Overall 71 per cent of employees said they were positive or very positive about the company, although 50 per cent do not or tend not to believe what management says, and more than 60 per cent disagree or tend to disagree with the statement that Mortgage Express management generally understands the problems they face in their jobs.

Staff development is one means by which Greenough and his fellow executives will be hoping to improve their rating this year.

Among the 36 employees being sponsored or part-sponsored for a professional qualification at the moment is Sue Every, a litigation supervisor who started as a temp in the collections department. Every has just completed an MA in Human Resource Management, having written her dissertation on the problems of downsizing at Mortgage Express. She is also developing a course on CVs/job applications which she hopes to run for colleagues if a pilot project proves successful.

More interesting work is another important source of motivation, say Mortgage Express executives. Taylor points out, for example, that 39 people have been moved to new positions in the company in the past year. "As the company gets smaller, the chance of someone moving into a supervisory/management role is greater than it would otherwise be," explains Anne McDougall, manager in risk and management accounts.

Financial incentives, however, do not appear to loom large at Mortgage Express.

According to Greenough: "what you pay people is a potential demotivator if you pay them a wage which is inconsistent with the market. This is a possible source of dissatisfaction. Paying people more money is unlikely in itself to create a higher level of performance. It is the way you treat them."

The ideas of Gary Hamel and C.K. Prahalad are already well-known to regular readers of this page. Harvard Business Review subscribers are also familiar with them, from a series of brilliant articles, two of which, "Strategic Intent" and "The Core Competence of the Corporation", have won the annual McKinsey award for the review's best article.

Now they have used the material in those articles as the basis of an exciting and valuable book on how companies build up leadership positions in new industries.

It is a book they are well-equipped to write: Hamel is professor of strategic and international management at the London Business School and Prahalad is professor of business administration at the University of Michigan. They are experienced consultants, and the book draws heavily on the work they have done for companies such as Motorola, EDS, Philips and Whirlpool.

Competing for the Future is a book about corporate strategy, but it is not a book about corporate strategy as it is taught in most business schools and practised in most companies. The authors are not concerned with how to position the firm optimally within an existing industry structure, but with how companies create new industries.

They see this process as having three distinct but overlapping stages. The first of these is competition for industry foresight and intellectual leadership. This is competition to gain a deeper understanding of technological, demographic, regulatory or lifestyle trends and discontinuities that may transform industry boundaries and create new industries.

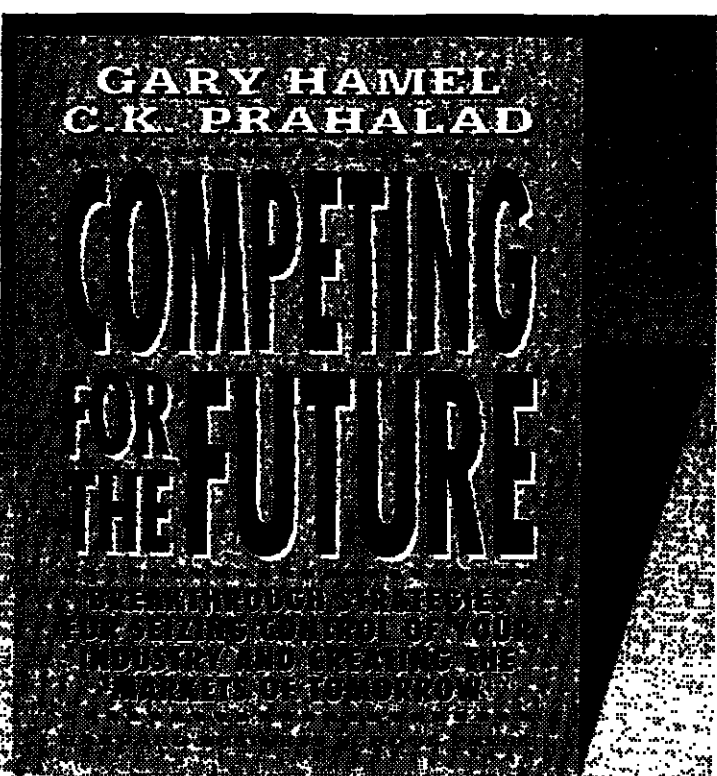
Second, there is the race to accumulate the necessary core competencies, to overcome technical hurdles, to attract coalition partners, to construct the necessary product or service delivery infrastructure and to get agreement around standards if necessary.

The third stage is competition for market position and market share. A big advantage accrues to the company that is the first to penetrate global markets, and the way to get there quicker is "expeditionary marketing". Market research provides a valuable way for refining existing product concepts, but it is not very helpful where new products are concerned. The way to learn faster than competitors is, therefore, to develop an effective system of product iteration.

This whole process of building a leadership position can take 15-20 years. For example, JVC, a subsidiary of Matsushita and the world leader in VCRs, began developing videotape competencies in the late 1960s and early 1980s, after Ampex,

David Sainsbury reviews a book expected to be this autumn's top business title in the US

Be a better builder



a US company, had produced the first videotape recorder in 1958. But it was not until the late 1970s, nearly 20 years later, that JVC had a winning product with its VHS-standard machine.

In this process of building up a leadership position the authors assign a key role to the acquisition and deployment of core competencies. They define a core competence as a bundle of distinct and defensible skills and technologies that enables a company to provide a particular benefit to customers. At Sony, for example, the benefit is "portability" and the core competence is miniaturisation. The possession of these competencies enables companies to move into new product areas. Also, because they represent cumulative learning

rather than great leaps of inventiveness, it is difficult for competitors to "time compress" competence building and catch up.

The authors also attach a great deal of weight to the motivation and ambitions of companies, and they argue that starting resource positions are a poor predictor of future industry leadership. While a traditional view of strategy focuses on the "fit" between existing resources and emerging opportunities, the companies which build up leadership positions are those that have a "strategic intent" that creates, by design, a substantial "misfit" between resources and aspirations. Strategy is about stretch as well as about fit.

When British Airways proclaimed just after its privatisation in early

1987 that it wanted to become "the world's favourite airline" many people would have said this was not a realistic ambition. But by 1992, Business Traveller magazine was rating BA as the best transatlantic airline, and number two worldwide only to Singapore Airlines.

This book is a useful antidote to much current management thinking. As the authors say, it is a book for those who are "more inclined to build than cut". They believe that the US and Britain have produced an entire generation of managers concerned only with downsizing, delayering and divesting, and that the time has come to put more emphasis on creating the markets of the future. Otherwise managers will find themselves on a treadmill trying to keep one step ahead of the steadily declining margins and profits of yesterday's businesses.

The ideas put forward in this book are stimulating and original and many of them are already being used by successful companies. But they need to be handled carefully by businessmen and women seeking to apply them.

While companies should be ambitious, the book at times becomes too inspirational. If one's "strategic intent" is strong enough and one is imaginative enough, then there is apparently nothing to stop one becoming the leader of one's industry. Any small business can become a Honda or a Sony. But for many companies more modest ambitions may be more appropriate. They may be limited by the talent and skills of their management team.

Second, while the authors have sought to show how their ideas can apply to all industries, they are undoubtedly at their best when discussing world-class electronics and IT companies, where most of their consulting has been done. I have no doubt that their ideas can be applied more widely, but they will need to be modified. The chief executive of a medium-sized engineering company will find a lot here that is useful and interesting, but he will need to adapt the concepts carefully to the circumstances of his own company and industry.

I predict that this book will be a big success, and that many businessmen will gain competitive advantage from reading it. It provides a more coherent view of strategy than Kenichi Ohmae's *The Mind of the Strategist*, is more original and stimulating than *In Search of Excellence*, and is certainly more enjoyable to read than Michael Porter's volumes on *Competitive Strategy* and *Competitive Advantage*.

*Harvard Business School Press. \$24.95 US; £21.95 UK.

The author is chairman and chief executive of J Sainsbury, Britain's biggest supermarket chain.

Sharing the blame

When a company performs badly, shareholders usually blame the chief executive and other senior executives. The criticism is rarely directed towards the board of directors.

Boards have been "unique among institutions in their insulation from performance review and enforceable mandates to change their procedures or membership," says a study by the Conference Board, a business membership organisation that researches business policy and practice.

Yet there are signs that this state of affairs is changing. The Conference Board study reports "a growing recognition" that boards have a responsibility to review and improve the effectiveness of their operations.

There has been an increasing demand for director accountability following poor company results and the publication of the Cadbury report in the UK, which attempted to define standards for corporate governance. Those companies which have introduced director appraisal systems tend to stress the importance of contributions to discussions, says the report. Other issues that tend to be highlighted include analytical ability, assertiveness and skill at communicating.

But formal procedures to evaluate board performance are still rare.

The assessment of directors is handicapped because boards are "a community of peers" whose role has not traditionally involved criticising their collective or individual effectiveness. As a result, devising an assessment process that commands general respect is paramount. "Because the exercise lacks any compulsion or enforcement authority, it derives its legitimacy from the integrity of the process itself," says the report.

*Corporate Boards: improving and evaluating performance. Price £100. Available from The Conference Board, 645 Third Avenue, New York, NY 10022-6601.

Vanessa Houlder

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The Joint Administrative Receivers, Andrew Pearce and Graham Ord, offer for sale, as a going concern, the business and assets of THOS TREVIS SMITH LTD and STUART LEISURE PRODUCTS LTD, which manufacture and distribute a range of timber products including garden plant containers, garden furniture, smoker tables, industrial packaging, traditional cooperage and operate some third party warehousing. Salient features are:

- Annual turnover of approximately £1.3 million and existing order book in excess of £100,000
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- Trevis name established for over one hundred years

For further details please contact Andrew Pearce, Ernst & Young, PO Box 1, 3 Colmore Row, Birmingham B3 2DB. Tel: 021-626 6262, Fax: 021-626 6305.

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- Independent water supply from boreholes with desalination and water softening plant;
- Average bed occupancy rate of 66% achieved during the last year;
- Estimated annual turnover of KShs 258 million (\$3.0 million);
- 29 acre leasehold plot with unexpired term of 95 years.

For further details and sale particulars please contact Keith Sinclair or Pratul Shah, Joint Receiver & Manager, Coopers & Lybrand, P O Box 30158, Queensway House, Kaurunda Street, Nairobi. Telephone (254-2) 339308, Fax: (254-2) 218555, Telex: 22574.

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- Current contracts may be available for novation

For further information contact the joint administration receiver:
PE Reddin, Price Waterhouse, Cornhill Court, 19 Cornhill Street, Birmingham B3 2 DT. Telephone: 021 200 3000, Facsimile: 021 200 2484.

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The Joint Receivers, Frank Blin and Ian Rankin of Coopers & Lybrand, Glasgow, offer for sale the business and assets of this established cheese manufacturer in South West Scotland.

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- established quality product and reputation for cheese, butter and skimmed milk powders
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For further details and on appointment to view, please contact Ian Rankin or Jim Kicoutan of Coopers & Lybrand, Kilmory House, 209 West George Street, Glasgow G2 2LW. Telephone: (041) 248 2644. Fax: (041) 226 5133.

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'Oh What a Lovely War' revived

There must be a distinction between those who remember the original, explosive production of Joan Littlewood's *Oh What a Lovely War* at Stratford East just over 30 years ago and those seeing the piece for the first time in the revival by the National Youth Theatre. By comparison, the NYT performance understandably lacks fire-power.

Yet there are compensations and even the odd improvement. One of the opening songs, "We don't want to lose you, but we think you ought to go", is immensely moving precisely because it is played by such young people.

The build-up of the songs is a reminder of what a musical masterpiece Ms Littlewood produced. They go from confidence to doubt to near despair. In "A long way to Tipperary" there seems to be a new emphasis in the line "but we're not down-hearted yet". In "Pack up your troubles in your old kit bag", they are still trying to force a smile. It's a long from 1914 to "I want to go home, Oh my, I don't want to die".

The dialogue scenes are generally less confident. The NYT cast cannot really pull off the generals and their ladies and perhaps the original text was not as strong as we recall. The exception remains Christmas Eve when the Tommies hear the Jerries singing "Heil'ge Nacht" from across the trenches: they talk, fraternise, play football in no-man's land before the shelling resumes. This is as moving as ever.

Direction is by Dean Byfield and the show is sponsored by Price Waterhouse. It runs at the Bloomsbury Theatre, London WC1 (071-385-8822) until September 10.

Malcolm Rutherford



Cast of the National Youth Theatre: the build-up of songs is a reminder of what a musical masterpiece Joan Littlewood produced

Sponsorship Record for Edinburgh

Arts sponsorship was late into the recession, but seems to be coming out of it quite smartly - at least in Edinburgh. The 1994 festival, which closes tomorrow, attracted 15 per cent more corporate support than last year, with a record total of £1m. The money is vital - it accounts for 20 per cent of festival revenue. Only half the aid goes in straightforward arts sponsorship. The remainder is donations from trusts and individuals and from the corporate membership scheme, where companies are tempted to form a festival connection for as little as £2,500. Edinburgh hopes to sign up more London-based companies, Whitbread and Bats are recent additions.

The increase in sponsorship owes something to renewed business confidence and more to the fact that the festival is enjoying an artistic revival under director Brian MacMaster. This does not mean that his ambitious presentations, like a seven and a half hour *Orestes* in Russian, are enthusiastically embraced by sponsors - this year's challenging foreign drama productions failed to get backers. But they did receive a good critical response and this raised the prestige of Edinburgh.

Predictably, sponsors at the festival are motivated mainly by the corporate hospitality opportunities - IBM flew in 200 top executives from Europe for its sponsored concert of Beethoven's Ninth Symphony - but the festival's development director, John Godfrey, is trying hard to broaden their horizons. He made some progress this year when one long-term sponsor, the Royal Bank of Scotland, added advertising of its connection and competitions for tickets, to its traditional format. Another leading sponsor, Hertz, which sponsored Miami City Ballet, invested some of its money in an educational project, with dancers visiting local schools.

The Royal Bank of Scotland was quick to exploit the festival's newest attraction, the Festival Theatre, and put 500,000 behind the opening production there, Beethoven's *Fidelio*. In contrast, events at the other main festival venue, the Usher Hall, commanded a sponsorship tag of £20,000. The festival, like every other arts organisation these days, is open to offers on the size of a sponsor's commitment.

This flexibility brings in the newer, more experimental companies, like Beck's Beer, which was willing to put some money behind one of the most elitist festival events, the Canadian director Robert Lepage's new work, *The Seven Streams of the River Ota*. Even so the festival still relies on local banks, utilities and breweries for most of its sponsorship income.

Like other arts organisations, the Edinburgh Festival is alive to the opportunities in payment in kind. But Godfrey is not soft-headed - there is no airline deal this year because he was not prepared to give £30,000 worth of sponsorship privileges to an airline in return for the equivalent in full price tickets. It is better to do a deal elsewhere - with InterCity, for example - and buy air tickets for artists when needed from discount sources.

Hertz gives some of its support in kind as well as cash, and in return for inclusion in the Corporate Membership Scheme Strathmore Spring Water is supplying 8,000 litres of the stuff. Famous Grouse ensures that every performer at the festival receives a bottle of whisky.

Godfrey is adept at persuading major arts supporters to at least do something in Edinburgh. British Gas is currently re-examining its sponsorship programme but has agreed to pay for the video that will promote sponsorship of next year's festival, when the target is £1.2m.

Antony Thorncroft

Antony Thorncroft

The Edinburgh Festival: Lynn MacRitchie on the Obala group from Sarajevo; and Alastair Macaulay on the Fringe and theatre

Art among the ruins

This has been a good festival for the Demarco European Art Foundation, housed for the moment in the former St Marys School. The building is overflowing with activity in every corner. So far, one show, *Mirjam* by Mariela Stefanovic, has won a Fringe First award. Damian Hirst's rats have grabbed lots of welcome headlines and *Romeo and Juliet* by the Estonian Youth Theatre is proving a festival favourite. But perhaps the most notable achievement is the appearance of the group of artists from the Obala Gallery in Sarajevo which has finally managed to bring its exhibition *Witnesses of Existence* to the festival.

Invited by Richard Demarco last year, the group was unable to get permits to leave the city. This year, with the help of a sympathetic officer, the artists have been able to get out on UN flights and have taken the show to New York and Switzerland before arriving in Edinburgh.

Demarco's interest in eastern Europe is no new phenomenon. The idea for the present show was born when Demarco took a group of Scottish artists to Sarajevo in February 1993. He says, "I believe we must listen to all the languages of Europe... Here we bridge the gap between the world of art and the world of reality... around the heart of Europe which is bleeding. Our life as artists is about confronting the issue of the creation of gaps, failing to make contact."

The visiting Sarajevo artists agree with this sentiment, but their position is difficult. After discussion, it was agreed that it would be in everyone's best interests if two Serbian theatre companies originally scheduled to appear at the

Foundation staged their performances elsewhere, and a new venue was found. "Being anti-war is not enough," the exhibition co-ordinator Izeta Grudevic told me. "You have to be against the camps, ethnic cleansing, everything. Our group is completely mixed, we are a Bosnian group. But art is not divided from politics."

Demarco believes that education is the vital factor in making art the force for good in our lives, and hopes that the Foundation can remain permanently at the school as a sort of international interdisciplinary university.

"Most people are so simple, their lives are about absurdities, and that is our problem - it is a question of education, of

giving people more than they have been given. When we understand that culture and education are two sides of the same coin, we will not have a Ministry of Culture and a Ministry of Education, we will have civilisation."

The experience of the Obala Gallery artists would seem to confirm that art can have a life enhancing role no matter how atrocious the circumstances of its creation. When what was to have been their new gallery space was destroyed by shelling before they had moved into it in spring 1992, they decided to exhibit their work there anyway, and organised a group show in December in the ruins of the basement.

Meanwhile, the basement had become a

safe passage for pedestrians across an intersection notorious for sniper fire. The artists' diary of the exhibition has photographs showing passers-by, one still in a crouching run, one clutching a loaded shopping bag, staring in amazement at them calmly arranging their work. "The artists wanted to keep it as a space for spirituality..." Izeta Grudevic explained, and their installations among the ruins, some of which have now been brought to Edinburgh, became an affirmation of the determination to be civilised, to behave above all with decency and dignity, which was coming under such brutal attack. "People were surprised and happy, they were crying at the opening. When you have no food, no water, no electricity, people used to say is art so important? Now they do not ask that question."

Witnesses of Existence comes to the Atlantic Gallery, London, in December.

The Hour We Knew Nothing of Each Other

People come, people go. (Nothing ever happens in Grand Hotel.) They have their exits and their entrances. Time passes. Peter Handke's play *The Hour We Knew Nothing of Each Other* has stage directions but no words. And its top layer - as realised by Luke Bondy's staging for the Schaubühne am Lehnert Platz, Berlin, now at the Edinburgh Festival Theatre - is an absurdist study in character.

Individuals cross the stage, each revealing some different peculiarity, and many of the vignettes concerning them are funny. There are the four Austrian-type tourists, determinedly trekking along against all odds, hearing their wonder, the two old peasant women pushing shopping-trolleys; the lone male roller skater who finds time to stroke his hair oh so casually and then glides offstage in a sudden arabesque; the SAS-type soldiers who zoom periscope on the stage and straight off again; a Tarzan who swings onto the stage and then walks across it like an ape; a Papageno, whistling appropriate tunes by Mozart, with his birdcage, who gets clobbered by a harmless-looking giant carrying a huge pack of nappies.

All of them look as if they were *New Yorker* cartoons. But the fun of a cartoon is that it is one frozen moment out of time. *The Hour We Knew Nothing of Each Other*, however, is 120 minutes long. And it soon adds up to a view of the world - a world peopled by oddballs, where nothing has rhyme or reason, where noises off (gms?)

bombs?) frighten everyone into defensive posture.

The mood only darkens after an hour or more, although you know from one look at Gilles Aillaud's elegant after-Magritte set that darkness will descend. An Egyptian dog-deity on a plinth; an old car half-covered by a dust-sheet; a blue horizon; a manhole; an incomplete white wall... The fact that these scenic elements do not add up to anything coherent is, of course, the whole point.

Let nobody think that any of this is the least bit original, by the way. The shape of it is extremely reminiscent of many Merce Cunningham works, and many of its comic anecdotes have been prefigured in any number of ballets by Jerome Robbins. And the Dadaist feel of it all, the collection of bizarre human eccentricities, derives from such Pina Bausch works as *1990*.

So why do I find so much less merit in Handke's play than in these works it so resembles? He is only interested in external differences. Whereas Cunningham honours human potential and makes it large and complex, Handke knocks it down to size and makes it pointless. Even Bausch, to whose Tautonic spirit he is much closer, is more interested in the urgent internal forces that motor the unhappy crazies she puts onstage. Handke's play is the hour we knew nothing of each other - and cared less.

At the Edinburgh Festival Theatre till September 3

Treats from the Fringe

One moment she is performing to "The things I've done to make you love me", the next to "Isn't it plain, I can't bear to be handled. Don't touch me." The quick alternation is hilarious, and at the same time, horrifying. The artifice of glamour becomes more and more obvious, and the torture of striving for perpetual chic becomes more alarming. And yet, despite yourself, you laugh.

Is it possible to be both camp and innocent? The Topp Twins, from New Zealand, land, manage it. Their show has now ended at the Traverse, but I loved it and I hope Britain sees them again soon.

In their last-night show, *Camping Out*, they welcomed us to the Happy Valley Camping Ground. One of them was called Camp Mother, the other Camp Leader. If you put Dame Edna into *Hi-de-Hi*, you might begin to get an idea. "We're going to try something tonight we haven't tried in a long time," Camp Mother announces. "We call it audience participation. You call it fear." And soon we were singing camp songs, on stage playing camp games, and several of us ate camp food. We knew it was safe, because we had watched Camp Mother trying it.

The innocent fun of it never palled. But what made *Camping Out* something rare in its sheer professionalism - the Topp Twins are very good singers - and the detail with which they built up their characters. Camp Mother and Camp Leader are both relentlessly jolly, bespectacled, spin-

sters. Camp Mother throws herself into camp activities with immense vim. In consequence, she has to keep brislingly readjusting her boob-tube. Camp Leader is more tongue-tied and nervous, but gets terribly over-excited. She grins awkwardly, her little tongue flickers out like a snake's, she blinks and wrinkles her nose. Then at last she gets to have the stage to herself for two minutes. "I'd like to point out how *malnourished* Camp Mother has been this year," she says with a nervous giggle. "She had more than her share of heartbreak last year, you see. Well, (conspiratorially) as a matter of fact," (chorally) "she got *filled*!" For a moment Camp Leader is convulsed in glee.

Another fringe highlight is *The Big Window*, a 100-minute musical at Theatre Workshop performed by an Anglo-American cast of 10 and hand of three. This is a delicate, sophisticated piece which deals with heartbreak and sexual confusion in an urban milieu.

The music, composed by Linda Dowdell, is in an eclectic vein of high jazz. The words, by Kate Browne, have a fine talent for light irony. "You and I have known each other a long, long time. We are, if I remember correctly, even married." And she and Dowdell have so collaborated that the words move into haunting Gertrude Stein-type cycles: "Perhaps she said perhaps. There is a wide paucity of rhythm, some debt photography by Kraig Patterson, but the most exciting thing of all is that Dowdell shows a very rare instinct for word-setting. In ensembles, in solos, in high-jumping vocal lines, she plants words with exceptional clarity and to great effect. While you applaud, you hope this is the embryo of some larger project.

INTERNATIONAL ARTS GUIDE

The Glory of Venice

The main autumn exhibition at London's Royal Academy is devoted to the art of 18th century Venice. Opening on September 15, it will encompass the whole range of artistic production, including painting, drawing, printmaking and sculpture.

Venetian painters of the 18th century built on a tradition inherited from the Renaissance, when the lagoon city's reputation as a great centre of art was established. They created works in which colour and light were of paramount importance, producing altarpieces for cathedrals, decorative paintings for the laity, and portraits and views of the city for tourists.

Several of Canaletto's most spectacular views from England and Venice will be on show. The other great view painters, Francesco Guardi and Bernardo Bellotto, will also be represented. All aspects of the work of Giovanni Battista Tiepolo, the presiding genius in Venice at the

time, will be featured - including a rare showing of St James of Compostela (1751), on loan from Budapest.

The work of Tiepolo's contemporary, Giovanni Battista Piazzetta, should prove one of the revelations of the exhibition. One of the least known artists of the period, Piazzetta painted altarpieces of great dramatic power - one of which, Archangel Raphael with St Anthony of Padua and Luigi Gonzaga (c1730), has been specially restored. Our knowledge of daily life in the city is in part due to painters of genre scenes, including Pietro Longhi, who recorded everything from a lady's morning toilette to regattas and street vendors.

Three artists who bring the show to a close were to sow the seeds for developments in 19th century art: the painter Bellotto, the engraver and draftsman Pissarello and the sculptor Canova. Tickets will be available on the day at the Royal Academy, or you can avoid queues by booking in advance at First Call (tel 071-240 7200). The exhibition, sponsored by Sea Containers Ltd, runs till December 14.

EXHIBITIONS
AMSTERDAM
Rijksmuseum The Renaissance Print 1470-1500. Ends Oct 30. Closed Mon
Van Gogh Museum Van Gogh's Self-Portraits. Ends Oct 9. Daily
ANTWERP
Hasseltmuseum Music and Painting in the Golden Age: 50 paintings by 17th century Netherlandish masters. Ends

7 Oct 30. Closed Mon
BERLIN
Berlinerische Galerie Raoul Hausmann (1884-1971): retrospective of one of the leading figures in the Berlin avant-garde of the 1920s. Ends Oct 2. Closed Mon
Ephraim-Palais Berlin Painting from Bleichen to Hoyer: a selection of the most important 19th and early 20th century paintings from Berlin galleries. Closed Mon (tel 238 0900)

BONN
Kunsthalle The Century of the Avant-Garde in Central and Eastern Europe: 700 works by 200 painters and sculptors, offering a thematic guide to the modernist developments of the past century. Ends Oct 18. Closed Mon
BRUGES
Groeningemuseum Hans Memling: 40 works by the 15th century Flemish master. Ends Nov 15
St John's Hospital Modigliani Drawings 1905-1914. Ends Oct 2

CHICAGO
Art Institute Odilon Redon: 180 works by the late-19th century French painter-poet. Ends Sep 18. Goya: 100 small-scale paintings. Ends Oct 16. Daily
COLOGNE
Wallraf-Richartz-Museum Wilhelm Leibl: 150th anniversary tribute to the Cologne painter who was leader of German Realism in the late 19th century. Ends Oct 23. Closed Mon
DRESDEN
Kupferstich Kabinett James McNeill Whistler: a rare German showing of etchings and lithographs by the American artist who established his reputation in Europe in the late 19th century. All 62 exhibits were collected in Dresden

between 1892 and 1919, and are being shown for the first time. Ends Nov 25. Closed Sat and Sun
ESSEN
Villa Hügel Paris - Belle Epoque: an evocation of the period from 1880 to 1910 with paintings, drawings, posters, photographs, glass and furniture. Ends Nov 13. Daily
FLORENCE
Palazzo Pitti Royal Treasures from Denmark: silver furniture, royal costumes and horlives dating from the era of Frederik IV of Denmark, who visited the court of Cosimo III in Florence in 1709. Ends Sep 11

GLASGOW
Garnett Collection Aspects of the Italian Renaissance 1400-1650: an exhibition of paintings, glassware, ceramics, decorated arms, illustrated books, textiles and musical instruments, capturing the spirit of an extraordinary period of creativity. Ends Sep 25. Daily
HAMBURG
Deichtorhallen The Century of the Multiple: 130 artists are represented in this survey of multiple art editions in three-dimensional form, ranging from early replicas of objects by Duchamp and Man Ray, to present-day mass reproductions. Ends Oct 30. Closed Mon
Kunsthalle Masterworks from the Guggenheim Collection: 60 paintings by Picasso, Braque, Dubuffet, Bacon, Chagall, Kandinsky and Miró. Ends Sep 25. David Hockney: drawings from 1954 till the present. Ends Oct 10. Closed Mon
LONDON
British Museum Greek Gold - Jewellery of the Classical World. Ends Oct 23. Daily

Victoria and Albert Museum Pugin - A Gothic Passion: retrospective of the 19th century British architect and designer. Ends Sep 11. Daily
Royal Academy of Arts The Belgian Avant-Garde 1880-1900. Ends Oct 2. Daily (advance booking 071-240 7200)

Courtauld Institute The Samuel Courtauld Collection of Impressionist Paintings. Ends Sep 25. Daily
Tate Gallery Turner's Holland. Ends Oct 9. William Blake - Art and Revolution: an exhibition focusing on the English artist's output in the 1790s. Ends Oct 16. Daily
LUGANO
Villa Favarita The St Petersburg Murals: first-ever public display of 98 large double-sided folios of breathtakingly beautiful calligraphy by the celebrated late 18th century Persian court artist Mir 'Imad Ali-Hassani. Ends Oct 2. Europe and America: 19th and 20th century oil paintings and watercolours ranging from the Hudson River School to examples of Cubism, German Expressionism, the Russian avant-garde, Dada, Surrealism and Pop Art. Ends Oct 30. Closed Mon. No parking facilities: take Bus no 1 (tel 091-516152)

NEW YORK
Metropolitan Museum of Art The Annenberg Collection of Impressionist and Post-Impressionist Masterpieces. Ends Nov 27. Daily - The Early Years. Ends Sep 18. Closed Mon
Museum of Modern Art British Drawings 1890-1990. Ends Sep 13. Closed Wed
Whitney Museum of American Art Edward Hopper (1882-1967) and Jack Plerson (b1962): the latter has

selected 20 works by the former, and placed them alongside his own work. Ends Sep 11. Joseph Stella (1877-1946): more than 200 works by the American modernist. Ends Oct 9. Closed Mon
PARIS
Musée d'Orsay Nadar. Photographs 1854-65: Nadar was a friend of writers and painters, whose portraits raised photography to a creative art. Ends Sep 11. Closed Mon
Centre Georges Pompidou Joseph Beuys: retrospective of one of Germany's leading avant-garde artists of the postwar period. Ends Oct 3. Closed Tues

MUSÉE PICASSO The world's largest collection of Picasso's work is completed by his own collection of paintings by friends such as Braque and Matisse, and artists he admired, such as Renoir and Cézanne. Closed Tues (4271 2521)
MUSÉE RODIN This delightful 18th century town house contains the life work of the sculptor Auguste Rodin. Closed Mon (tel 4418 6110)
MUSÉE MARMOTTAN This museum houses an important collection of paintings by Monet, including Impression-*Soleil levant*, from which the Impressionist movement took its name. Closed Mon (tel 4496 5033)
VENICE
Antichi granai della repubblica China in 220 BC - The Warriors of Xi'an: ten of the 7,000 life-size terracotta soldiers who guarded the tomb of Emperor Qin Shihuangdi in central China, along with copies of war chariots and weapons discovered in one of this century's most dramatic digs. Ends Sep 11. Daily

WIENNA
Jüdisches Museum Max Oppenheimer (1885-1954): retrospective of one of the most neglected figures in early 20th century Austrian art. Ends Sep 18. Closed Sat
Kunsthistorisches Museum Tintoretto portraits. Ends Oct 30. Albert Dörner: a selection from the museum's collection of work by the early 18th century German master. Ends Oct 30. Closed Mon

WASHINGTON
National Gallery of Art From Minimal to Conceptual Art - Works from the Vogel Collection: 90 drawings, photographs, paintings and sculpture by contemporary artists, including LeWitt, Christo, Rymen, Bayes and Flavin. Ends Nov 27. Daily
Freer Gallery of Art Chinese Calligraphy: the exhibition focuses on varied uses of calligraphy on 36 decorative and utilitarian objects made of clay, lacquer, jade, bamboo, silk and wood, dating from the 7th to 19th century. Ends next May. Egyptian Glass: 15 brilliantly coloured glass vessels dating from the second millennium BC. Daily
Arthur M. Sackler Gallery Lois Corner - Photographs: 80 large format photos depicting architecture and nature by the American photographer working in Asia. Ends next May. Daily
ZÜRICH
Kunsthaus Dada Global: a large selection of paintings, drawings and collages by Duchamp, Man Ray, Ribemont-Dessaignes, Max Ernst and many others, relating to the nihilistic movement founded in Zurich in 1916. Ends Nov 6.

Environmentalists must live with trade, says Clayton Yeutter

'Gatting' the Greens



PERSONAL VIEW

Recent congressional debate might suggest to most Americans that trade and environmental policies are incompatible. Some environmental groups fear that decisions made by the World Trade Organisation may force a "lowest common denominator" reduction in environmental protection in the US and elsewhere. Proponents of trade expansion are equally worked up, fearing inclusion of environmental issues on the WTO agenda will add burdensome delays and complexities to trade policy decision-making. Both sides are over-reacting. There is no inherent conflict between environmental protection and open trade; they are not mutually exclusive goals. There is nothing in General Agreement on Tariffs and Trade rules – rules soon to be assumed by Gatt's successor organisation, the WTO – that precludes consideration of environmental issues during a multilateral negotiation. The more relevant question is whether those who seek consideration of environmental issues have as their primary motivation protecting the environment, or impeding trade.

The challenge for international environmental policy is to strike a sensible balance between economic development/job creation/trade expansion, on the one hand, and environmental protection on the other. In recent years most environmental organisations have begun to embrace market-based solutions to environmental issues, recognising that markets and growth are not generally inconsistent with environmental protection. There remains, however, a cadre of hard-core activists who view command-and-control regulation as the only legitimate environmental policy, and who also view economic growth as an enemy of the environment. This hard-core group seems bent on enshrining unilateral trade retaliation, extraterritorial regulation, and unfettered regulatory sovereignty as the corner-

stone of US trade and environmental policy. Painting the new WTO as a "Gattilla" out to devour the environment, as some environmental groups have done, trivialises the challenge of determining how best to mesh environmental protection with economic growth and trade expansion throughout the world. That answer is not to be found in a massive global environmental bureaucracy, nor in unilateral imposition of US environmental standards on developing countries; citizens of the third world are not about to be consigned to a future as hewers of wood and drawers of water. The answer must be found through multilateral consensus within Gatt (and then the WTO).

Gatt is already addressing many of these difficult and vital issues. The present agreement specifically permits nations to take measures to protect the environment, so long as they are aimed at conservation of exhaustible natural resources and are taken in conjunction with restrictions on domestic production or consumption.

This is broad language, and it has been interpreted broadly. Too often the positive side of Gatt's record on environmental issues has been overlooked. Gatt has clearly stated that a nation may have more demanding environmental standards than those in other countries – so long as they are not more trade restrictive than necessary. Gatt has also ruled that nations may take balanced action for conservation of natural resources outside their borders and that restrictions may be imposed to conserve a natural resource even if its stocks are not presently depleted. Gatt thus encourages nations to conserve resources for future generations.

Just recently the Gatt established a special committee on trade and the environment. It will study and report to the new WTO on a whole range of environmental issues of concern to US business, including

the trade effects of packaging and labelling requirements, product standards, and environmental charges. The US trade representative will also have an advisory committee on the environment to examine similar issues. The WTO must eventually confront these issues – in a manner compatible with Gatt's historic objective of opening trade. WTO member nations must act objectively and systematically, lest they seriously jeopardise a half-century of progress in liberalising trade. The US, as a leader in the WTO and a force for both open trade and environmental protection, should nurture this process, helping its fellow WTO members to avoid premature, capricious judgments concerning the future interrelation of the environment and trade.

All this is relevant to the present debate over giving the President "fast track" authority to negotiate environmental trade agreements. We simply do not yet know whether it would be in the self-interest of the US to negotiate on these issues, and we certainly do not yet know what our specific negotiating objectives would be. Most other nations are not nearly as far along on the "negotiating curve" as we are. After the recently established committee on trade and the environment reports its findings, interested parties in all nations can assess whether new trade/environmental negotiations are appropriate. If so, let's negotiate; if not, the WTO can and will move on to other issues.

The Gatt accord now before Congress will allow an individual WTO member to impose higher product standards than other nations so long as the standards are based on sound science. The US supports this concept, for it encourages environmental stewardship, but we need to make sure that "high" standards are not used simply to gain an unfair competitive advantage.

Standards that cannot be supported scientifically will properly be subject to WTO

challenge. Bad science is too often just disguised protectionism. Good science will improve public health and environmental quality around the globe, and it will also enhance the credibility of its proponent organisations.

Only through multilateral consensus can the US achieve meaningful change in international trade rules or global environmental standards. The US cannot mandate standards, because the Gatt – to the frequent benefit of the US – has traditionally operated by consensus. (Though that could change under the WTO, it is unlikely to do so except on rare occasions.) Therefore, the key to success is to negotiate and negotiate well.

If we have unrealistic negotiating objectives in these new areas, the negotiations will not succeed. That would do nothing to protect the environment. But we can work through the WTO and other international bodies to convince other nations of our positions and to encourage the adoption of sound principles to improve environmental protection.

Reducing trade barriers in industrial countries will also encourage developing countries to raise their own standards of environmental protection. Nations devote more attention to protecting the environment as they become richer. As a middle class emerges and grows, demands for protection of the environment increase. We should work with this trend, not against it. In short, we need to "Gat" the greens, not "green" the Gatt. Multilateral co-operation on issues affecting trade and the environment will offer a stronger and more secure basis for environmental protection than ad hoc, politically charged actions by individual nations, however well intentioned. Those of us who have worked on trade issues for many years do not believe that open trade and environmental protection are inconsistent goals. We look to the future with confidence that the WTO will properly mesh legitimate objectives in both areas.

Ambassador Yeutter, former US Trade Representative and Secretary of Agriculture, is counsel to the Washington-based law firm of Hogan & Hartson

Trade unionism in Britain is like a pruned back plant poised for a new burst of growth. The 1,000 delegates assembling this weekend in Blackpool for the 125th gathering of the Trades Union Congress may draw comfort from the words of Mr John Monks, TUC general-secretary. But could the TUC's modernising leader just be whistling to keep their – and his – spirits up?

The immediate outlook for trade unionism, as he himself acknowledges, is not good. Membership has continued to decline, by 400,000 to 7.2m, over the past year despite the fact that unemployment started to fall. Long-term trends contributing to the decline of unions and collective bargaining – the shift from manufacturing to services and the shrinking size of the average workplace – persist.

Nevertheless, TUC delegates can find some reasons for feeling cheerful. The arrival of Mr Monks, who only took over from the unimpressive Mr Norman Willis last year, has almost certainly improved the public standing of the TUC and unions in general. He has reorganised the TUC to give it a sharper focus; attempts to reposition it as a non-party political lobbying organisation for all employees are beginning to take effect. The arrival of Mr Michael Portillo as employment secretary may reduce the scope for dialogue with the government. But Mr Monks can develop further his friendly relationship with the Confederation of British Industry and later this month he will be the first TUC general secretary to address meetings at the Liberal Democrat and Conservative conferences.

Best of all for the unions as a whole, the biggest challenge they faced for years has been surmounted with relative ease. Recent legislation has required them to obtain positive consent from members before employers can "check off" union subscriptions from pay packets, in effect requiring unions to re-recruit the 80 per cent of members who pay union fees this way. Overall, TUC-affiliated union membership may shrink by about 500,000 as a result.

But for the first time in 15 years, the movement can look to the government in the eye and state that its core membership is real and voluntary. But in spite of Mr Monks' personal achievements, his attempts to modernise the union movement may be insufficient to stem long-term



Trade union leaders John Edmonds (left) and Jimmy Knapp: a disturbing peek into the future

Waiting for the workers' harvest

David Goodhart on attempts to update UK trade unions

decline. In addition his reforms face opposition from within union ranks.

Some of the more conservative union bosses have not grasped that European-style social partnership – which the TUC leadership regards as providing a new lease of life for the movement – requires changes from them too. There could be rows at the Congress on the policy of supporting workplace rights for all workers, rather than just union members, and on the shift to a less politically partisan stance.

Mr Monks's modernisation strategy has few reliable allies in the big unions, while the TUC's two biggest affiliates – Unison, the public service union, and the TGWU general union – remain consumed by splits between different internal factions.

Further, some old fashioned problems could be looming. Several unions are facing financial difficulties, none more than the heavily-indebted building union Ucat. Mr John Edmonds, leader of the GMB general union, says the fortunes of the unions no longer rise and fall together, and that it is now a question of the "survival of the fittest".

Another scylla of the past could be a revival of strike action. Mr Jimmy Knapp, chairman of the years' Congress and leader of the embattled RMT rail union, is enjoying strong public backing for his striking signal workers.

But the relative popularity of unions may be because strikes are so rare. A renewed bout of militancy over wages, often predicted in the course of the recovery, could undermine the support unions have begun to enjoy. So, too, could possible large-scale disputes over compulsory redundancies at British Telecom, which could cause much disruption for the public.

Worst of all for the future of the unions, there is no sign at the workplace that employees are turning to them for support in the face of increased labour market insecurity. Unions are failing to improve their record in the recruitment of women or part-time workers. Only 21 per cent of part-timers are in unions compared with 37 per cent of full-timers, while the proportion of women workers in unions fell last year to 30 per cent.

There is also no evidence that employers are starting to join unions as an insurance policy – for legal help and advice on subjects such as pensions. UK trade unionism may be a pruned-back plant but it is still waiting for fertilisation from outside.

LETTERS TO THE EDITOR

Number One Southwark Bridge, London SE1 9HL

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Weakness of European defence industry

From Mr Alain Deckers

Sir, Lex is right to argue that the consolidation of the US defence industry sets a challenge to Europe's defence industry ("Allied forces", August 31). Yet this trend has been ongoing for a number of years, and the European defence industry's reply has been less than wholehearted.

The fact is that it remains hopelessly fragmented, largely for political reasons. European companies which have undertaken cross-border mergers (Matra Marconi Space, Eurocopter) have been slow to implement unified management structures while others continue to engage in endless negotiations before embarking upon them (British Aerospace Dynamics and Matra Defence). This compares unfavourably to US deals which are clinched in months not years.

Furthermore, the *Groupeement d'Interet Economique*, which is so prevalent in the European defence industry, tends to perpetuate national reporting systems and duplication of effort. While second and third-tier suppliers have fared somewhat better, the picture in European defence R&D is equally incoherent, being dominated by a host of bilateral treaties and ad hoc collaborative projects with little or no co-ordination among them.

Previous attempts to provide a blueprint for a competitive European defence equipment market, such as the Independent European Programme Group's 1988 Action Plan, have lacked any credibility since they did not include a supranational executive agency which could force national governments to act. Yet deregulation and rationalisation of the European defence agency are desperately needed.

If European governments do

not wish to abolish article 232 of the Treaty of Rome and thereby give the European Commission oversight over the defence industry, it is at least incumbent upon them to find an alternative organisation which could fulfil this role.

The western European Armaments Group seems the only credible candidate, and steps in this direction need to be urgently revitalised. Alain Deckers, postgraduate student, Programme of Policy Research in Engineering Science & Technology, Manchester University M13 9PL

Lots of life at the English seaside

From Mr Procter Naylor

Sir, Michael Thompson-Noel is, as a travel writer, entitled to his subjective views about Great Yarmouth ("The English coast and its holidays from hell", August 27/28). However, I am surprised that you have allowed him to muddle these with what purports to be a business assessment of the state of England's tourism and its resorts.

He tells us that we have lost our soul to "haffness". The bits in between (the resorts) are "taken over by drab caravan parks". If he had bothered to go and look at these caravan parks and holiday centres he would have found a number of thriving businesses and would have seen the result of many years of steady investment by both national operators such as Pontins, Haven and Warner and by private operators such as, in the Great Yarmouth

area, Potters, Blue Sky (the Timewell family), Cherry Tree (the Marsh family), or Vauxhall. In any of these caravan holiday parks he would have found a wide range of sporting facilities, indoor and outdoor swimming pools and, most surprisingly, a variety of evening entertainment that he would not have found at twice the price in France, Spain, Portugal, Italy, Greece, Morocco, Tunisia, Bermuda, the Caribbean, Australia, New Zealand, Fiji, the Philippines, Thailand, Malaysia, Mexico, California, Canada or even Scotland!

Adele Biss, chairman of the British Tourist Authority and of the English Tourist Board, was right to highlight some of the problems that our holiday industry faces in her introduction to the ETB's annual report. I prefer this honesty to the over-optimistic messages put out by some of her predecessors. There still could be a further contraction in hotel accommodation in resorts. But standards are improving. There is a need for more innovative use of parasols, windbreaks and deckchairs to make our beaches attractive in the way that the Belgians, the Dutch and the Germans have achieved with the same climate as we have.

But there is life yet in England's seaside resorts and Financial Times readers should be aware that there is still money to be made there too! Mr Thompson-Noel would do well to reflect on what would be the effect on the national parks of the resorts closing down and all those who holiday there following him to the countryside. Procter Naylor, managing director, East Anglia Tourist Board, Tappesfield Hall, Hadleigh, Suffolk IP7 5DN

Japan economy theory needs further analysis

From Mr Peter McGregor

Sir, Martin Wolf's latest theory (Economic Eye, August 28) that the way to have a successful economy is to run a large trade deficit with Japan would be more convincing if he had analysed the imports of countries like Singapore, Hong Kong and Malaysia to discover how much of these were semi-manufactures from Japan to be completed with low cost labour and re-exported to the west. As it happens, the situation in Malaysia appeared in your survey (August 30), in which it was reported that typical prod-

ucts have 60 or 70 per cent of the value added in Japan or the US, a balance which the Malaysians are trying to change. What this means is intermediary "Wolf-succesful" countries merely provide cover for a Japanese trade surplus with the west which is even larger than the statistics show. His suggestion that "sophisticated econometrics" does not support the belief that (Japan's) imports are smaller than might reasonably be expected, also needs to be looked at critically, since studies in depth on the ground

tell quite a different story, as was demonstrated for the construction industry in 1990. Incidentally, I am disappointed to find that Wolf is not the simple-minded free trader that I had always assumed, but a believer in sophisticated econometrics. This has the great danger of substituting a hard look at the facts. No doubt he will be telling us next that the Japanese are not Keynesians. Peter McGregor, Langworth, Oxfordshire

Perverse argument

From Mr Peter Benton

Sir, The concluding paragraph of your editorial "Venturing Capital" (August 30) surprised me. "Generating more investment in small enterprises... cannot in itself be regarded as a same objective" looks perverse, when earlier you point out some of the peculiar problems that small companies face in raising funds. If the cost of due diligence is high in relation to the sums invested, surely that argues for an enhanced return after a successful investment? No one doubts the contribution that small business can make to the economy; it seems a pity that so many hopeful enterprises are strangled at birth.

Of course fiscal treatment is only part of the solution; the availability of quality information on investment opportunities is also crucial. That is what we are trying to promote. Peter Benton, chairman, Enterprise Adventure, The Enterprise Foundation, London Square, Cross Lanes, Guildford, Surrey GU1 1UG

Some hope

From Mr George D Mackenzie

Sir, Is there any hope that if members of parliament are refused their proposed pay rise they may go on strike? George D Mackenzie, 11 Barrow Park, Kelsie, Roxburghshire TD5 8DJ

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Friday September 2 1994

Seeking a role for Apec

The 17 members of the Asia-Pacific Economic Cooperation forum have been long on visionary declarations about forging closer regional ties. They have been much shorter, however, on specific plans. This week, a panel of expert advisers sought to fill the vacuum with a blueprint for the long-term development of the organisation.

Under the rubric of "open regionalism", their report urges Apec leaders to commit themselves at their November summit in Jakarta to the total elimination of trade and investment barriers in the region by 2020. The aim, they stress, should not be to create an inward-looking trade bloc, but to use liberalisation within Apec to promote the advance of global free trade, in conformity with the principles of the Gatt.

The authors of the report are to be commended both for their forthright rejection of the notion of a "Fortress Apec" and for their drafting skills. In formulating their recommendations, they have had to bridge widely differing viewpoints among the organisation's members. While the US and Australia are keen that Apec should develop into an active trade negotiating forum, that idea is opposed by a number of Asian members, including Japan and Hong Kong. Against this background, the government-appointed experts' unanimous agreement on the report's recommendations is no mean feat.

Whether their proposed way forward is either politically feasible or economically desirable is, however, much more debatable. Impressive as the aggregate economic weight of Apec's members may be - accounting for half the world's trade and 60 per cent of its GNP - their diversity is more striking than their similarities. They include the US and Japan, the world's two richest economies, but also China and Indonesia, two of its poorest. The main distinguishing feature of economic relations within Apec is the dependence of most of its members on trade with the US, rather than with each other.

Big confrontation

This is not an obvious basis for regional trade liberalisation. It is made no easier by the fact that

Life with Tiny (cont)

It would be understating things to say that Mr Rowland "Tiny" Rowland of Lomro is an anachronism in the sanitised entrepreneurial world of the late 20th century. Despite the mushroom growth of rules, regulations and codes of corporate conduct he is still there, defiant, at the age of 76, even as the remuneration committees roam and the audit committees delve. Yesterday, despite reports of an impending boardroom coup, he emerged with his expenses uncut, his position intact and his life expectancy almost certainly enhanced. It is, of course, an act to which he has devoted some practice.

The directors who are hostile to Mr Rowland can console themselves with the thought that he is (probably) mortal. But they will have to hone their skills at corporate trench warfare if they wish to procure any other dénouement in the near term. For outside observers the question is whether there are wider lessons to be drawn from the continuing saga surrounding this most durable of maverick entrepreneurs.

That seems doubtful because Lomro is sui generis, even if Mr Rowland is not. But it remains worth asking how the man who built up this huge international conglomerate has been able to run it down again over such a protracted period without anyone pre-empting the process. It is not as if Mr Rowland has had a controlling interest in the company. Yet he has had a remarkably free run in capital markets where the penalties for poor performance have grown harsher in recent years. If he is now under threat from his fellow joint managing director and chief executive, Mr Dieter Bock, it is only because he himself chose to bring him into Lomro as a potential successor.

Straight eight

One explanation for Mr Rowland's laissez-passer stems from the outcome of the earlier, notorious boardroom row in 1978, when the so-called straight eight directors failed to unseat him over several issues of corporate governance including excessive expenses. From then on Mr Rowland became a parish with the big investment institutions, the insurance companies and pension funds responsible for most of the net

disputes between Apec members are also at the heart of almost every big confrontation in the international trade system, ranging from trade in services to anti-dumping, labour standards and the environment. It is unclear that Apec's members would be better able to settle these differences in regional negotiations when they have signally failed to do so in the Gatt. It is no less utopian to believe that the US will suddenly drop its aggressive trade stance towards countries such as Japan and China and agree to offer them trade concessions as part of Apec-wide liberalisation.

Daunting hurdles

But even if these daunting hurdles could be overcome, would an Apec liberalisation programme benefit the world economy, as the report's authors contend? Their argument rests heavily on the claim that free regional trade provides powerful momentum at the global level. To the extent that disputes between Apec members are responsible for thwarting progress in the Gatt, they may have a point. Against that, the notion raises two objections.

One is that any meaningful regional programme would require a huge commitment of government resources, and would therefore be likely to divert negotiating efforts away from the Gatt and its planned successor, the World Trade Organisation. The other objection is that any liberalisation programme designed primarily to satisfy Apec members could become an alternative to the Gatt. The consequences would be all the more serious if the programme aimed, as the report recommends, to tackle not only border obstacles but government procurement and competition policy. Other countries which sought reciprocal trade agreements with Apec might then have no choice but to accept rules dictated by the organisation.

At present, that remains a remote possibility. It is one that many of Apec's members - as well as other countries - would also strongly resist. The experts' report offers Apec leaders an extremely ambitious agenda. Their sensible course in Jakarta may be to settle for more modest objectives.

If you want to know the time ask a policeman, advised the old music hall song.

How things have changed. Telling people the time is not an activity requiring the commitment of expensive, highly-trained police. Neither, the UK government may be about to conclude, are more important activities such as checking fingerprints, tracing missing persons or monitoring automatic speed-check equipment.

The Home Office is currently completing an internal review of specific policing functions as part of the government's review of public expenditure. Although ministers say this will not necessarily lead to changes in police responsibilities, the service is not convinced. Officers suspect the review will prove the prelude to market testing and the transfer of "ancillary" tasks to the private or voluntary sectors.

Events have not awaited the review's completion. Last week's annual meeting by Wandsworth council in London that it was considering extending its uniformed parks patrols to housing estates has sparked debate about the appropriateness of assigning policing duties to individuals who lack the training and status of police officers.

Controversy over Wandsworth's plan is in the detail - specifically its suggestion that patrols, with the powers of constables, should be sworn in by magistrates - rather than the substance. The Association of Chief Police Officers said patrolling was "one of the most difficult jobs which police officers are asked to undertake" and should not be attempted by under-qualified individuals.

Several local authorities have, without arousing opposition, begun using uniformed personnel to combat crime, while private security staff are increasingly deployed on guarding activities that bring them into contact with the public.

Completion of the review may mark the beginning of a government attempt to formalise such activities. But such a move would face practical hurdles that could, surprisingly, include reluctance of leading private security companies to take on duties that the government might want to offload.

Other problems include doubts about the ability of the private sector to give an adequate service and political arguments about taking police activities out of the state's hands.

Reputable security companies believe that the opportunities created in a fast growing sector are leading to an influx of "cowboy" operators whose disreputable, or incompetent activities, reflect badly on the entire industry.

The UK market for private security, already one of Europe's biggest, is growing with the introduc-

Alan Pike says fast-growing, unregulated security groups are causing concern in the UK industry - and the police

Hot under the collar of the law

tion of private management of prisons and rising demands for security guards at shopping malls, industrial estates and other locations.

According to a study last month for the Economic and Social Research Council, the sector employs at least 162,000 people. This would make the sector as big in employment terms as the police. The core security guarding market is worth about £1m a year. The information is short because the industry lacks statutory regulation. Anyone with a van, a mobile telephone and a convincing-looking dog can set up a security company. Cynics add that a criminal record is no impediment.

Reputable companies deplore the absence of regulation. The British Security Industries Association, which represents most of the leading operators, senior police officers and opposition MPs all support statutory regulation and licensing of security companies.

The government has rejected such demands for action. It prefers self-regulation and has told industry representatives that licensing would favour bigger companies and so be anti-competitive. It is not convinced that "cowboys" are more prevalent than in any other sector. Leaders of the industry may, however, insist on regulation to control rogue operators as the price for taking on any police duties.

Even with statutory controls, some security company managers share chief constables' reservations about the implications of transferring police work to the private sector. Mr David Dickinson, director of security company Group 4, told the Association of Chief Police Officers last month that the role of security companies must be confined to crime prevention and not stray into the area of law enforcement. He fears that the public would fail to understand a blurring of the edges between companies such as his and the police.

Setting a limit on the role of security companies would, however, allow scope for imaginative developments in joint working between the public and private sectors. Some police forces, Mr Dickinson says, already employ private security companies to guard their own head-



quarters. He suggests the police should consider whether to spend some of their budgets on buying in "preventative uniformed patrols in the community under the total control of the chief constable".

Chief constables' control is likely to emerge as a central theme in the police service's response to any government attempts to introduce a greater private role in policing.

The service is unhappy about the prospect of two-tier policing - it holds passionately to the view that whenever a police officer walks along a street he or she might be confronted with any number of emergencies, and must be trained and equipped for them all. But if the private security industry won statutory regulation, police confidence in it would increase. That

would put pressure on chief constables to become managers of a "mixed economy" of policing.

They could, in a pattern becoming increasingly familiar in the public sector, retain overall responsibility for activities carried out under contract by other agencies. There is a precedent for this: chief constables are now responsible for the management of large numbers of civilian staff recruited in recent years to relieve police officers of behind-the-scenes support duties such as running control rooms.

A "mixed economy" approach was proposed last month by an independent inquiry into police roles and responsibilities initiated by two academic bodies, the Police Foundation and the Policy Studies Institute. It raised the possibility of

street patrols run by local authorities, community groups or private security companies, operating under the direction of the regular police. Such support groups could, suggested the inquiry, relieve the police of administrative burdens such as delivering summonses or making inquiries about under-age drinking in public houses.

The inquiry's ideas have alarmed the Police Federation, which represents the rank and file. "It is estimated that the police service costs about 31p a day per head of population," says Mr Fred Broughton, its chairman. "By raising public spending by a few pence per head, it would be possible to put more police officers on the streets. They would be real, fully-trained officers capable of dealing with everything that arose, unlike the alternative patrols that are being considered."

The federation scorns the idea of substituting police officers with lower cost replacements; but there are fears in Britain's police stations that some chief constables, who are about to become more accountable under fixed-term contracts, may be attracted to it as a means of trying to meet and finance public demand for more street patrols.

As last week's reaction to the Wandsworth plan showed, transferring police duties to other providers generates ethical and constitutional concerns. Such worries have not been an obstacle before in the government's law and order policies. The introduction of private prison management was not halted by the argument of opponents that only state employees, untouched by the profit motive, should be allowed to deprive individuals of their liberty.

Having failed to deflect ministers on that issue, critics could not with equal seriousness claim that it would be an outrage for charities to become responsible for lost dogs, or private security companies or motoring organisations to escort wide loads along motorways.

But the argument does not end there. Those activities most suited to contracting out - from lost property to routine patrols - are the ones that bring ordinary citizens into most contact with the police service. Take them away, and where does it leave the regular, front-line police? As an increasingly remote, heavily armed, centrally deployed force, say critics - some of them in the police service itself.

This raises big constitutional questions. Yet they may not be heard amid the clamour from a public that wants more visible protection from burglars, car thieves and muggers, and is not particularly concerned whether the protectors wear the uniforms of the police, Securicor or the local council.

Angus Foster on a Brazilian habit that is part inducement, part consideration, part bribe

Just junk the jeito

There is a word newcomers to Brazil learn quickly. It makes them flinch at first; later it triggers a bead of sweat, and then it brings on a nervous laugh. It is used sparingly, even by long-term residents, because they sense its ability to strip away an outsider's defences and launch him, naked, into the cauldron of Brazilian culture.

The word is *jeito* and, like a formula for poison it is harmless unless you know what it means. It is a way or scheme to get around (rather than confront) a problem in Brazil. It can involve exchanging favours or outright bribery. And in Brazil there are a lot of problems.

Assume you have arrived in Brazil and want a telephone line. If you approach the local telephone company, its officials will merely laugh. The waiting list is a couple of years long, by which time your posting will have ended. Your options are to keep your sanity but go without a telephone or, you are told, there is a *jeito* - you can "buy" a black market line for about \$3,000.

The next step is to get the service working. Your local telephone company is happy to activate the line - for the payment of a

small *jeito*. But to install the actual telephone, the best *jeito* is to use a private company, which usually means an off-duty phone engineer.

Now comes the tricky bit. The off-duty engineer who installed the telephone is not allowed to link your telephone to the activated line. The only way to get it linked is to call another, on-duty engineer and to pay him a *jeito* to go off duty momentarily while he covers the fact that your line is black market and makes the connection.

If this scenario seems unlikely, let's just say it happened to a friend.

The *jeito* operates in almost every field of Brazilian life and often crosses into nepotism or corruption. Those in government dispense *jeitos* to friends and relatives, helping them find ways around the bureaucracy and to get jobs. Some argue Brazil's entire political system, based on regional alliances, would be paralysed without the flows of favour and patronage between the capital, Brasilia, and the provinces. No one knows how it started.



Things which never would be missed

Some say the *jeito* was travelling below deck when the Portuguese arrived nearly 500 years ago. Others argue it grew up in Brazil, where circumventing colonial law was crucial, given the size of the country and the many ways it took central government to relay decisions. A third school sees the *jeito* as a Brazilian cultural icon, a fusion of the Portuguese and west African

affinity for compromise.

The *jeito* may appear harmless abroad, from where it can be shrugged off as an endearing, faintly exotic aspect of Brazilian life. And it has many supporters in Brazil who argue it would be a less interesting country if it emulated northern European morality. Even the most sanctimonious foreigner soon learns that *jeitos* seem less naughty the more they are used. But the time has come to abolish the *jeito*. This is partly because it is out of date. Since Brazil's return to democracy 10 years ago, the population has been demanding more transparency from public officials. Both the front-running candidates for this year's presidential elections have, for example, had to dump their running mates over allegations that they used one *jeito* too many for personal profit while members of the senate.

But the main reason to ban the *jeito* is that it, together with high inflation, forms part of a way of life which has corroded Brazil's social fabric for decades. Indeed, one par-

ticular *jeito* can be seen as a leading cause of Brazilian inflation.

Successive generations of politicians abrogated their responsibility to control spending and price rises. They did so by, among others, trying to protect wages through the *jeito* of raising pay in line with inflation indices. As the rise in the indices accelerated, increases in wages and other prices became bigger and more frequent, exacerbating the inflationary mess. In June this year, the monthly inflation rate exceeded 50 per cent.

Brazil is now tackling its inflationary legacy. A new currency launched in July, called the Real and linked to the US dollar, has led to a sharp drop in price rises. Much remains to be done, including overhauls of the tax and social security systems. But the start has been made, and Brazil finally appears ready to cast off the stigma of being the last large Latin American economy to bring inflation under control.

It will only succeed, however, if it sticks to the difficult task of limiting spending and punishing corruption. It must also refrain from the temptation to get round today's problems by finding another *jeito*.

OBSERVER

Hanson goes exploring

■ Rarely does a humble hack get to fly in one of Lord Hanson's helicopter fleet.

But yesterday Observer temporarily joined the elite, visiting Air Hanson's swish base in Surrey, for the launch of a new and rather special McDonnell Douglas chopper.

A technologically impressive beast, the MD Explorer will be distributed in the UK and elsewhere by Air Hanson. Its big novelty is the lack of a tail rotor. Given that 20 per cent of helicopter accidents are caused by the tail-rotor, which is also a very noisy component, it should be a big selling point.

With no tail-rotor, US police and military can sneak up on the bad guys, at a price they like, with running costs of \$375 per hour against a minimum of \$500 for tail-rotor competitors. How come nobody has thought of it before? Ah, but they have: "I saw some photos of a Russian tail version back in the 70s, but nothing since then," says an MD executive. Of course, the proof of the pudding is in the eating.

Sadly, Observer can't tell you just how quiet the Explorer is since yesterday's chopper flight was grounded, thanks to a missing vital part.

However, McDonnell Douglas has promised Hanson that the rogue item will be found in time for next

week's international air show at Farnborough.

Tipperary

■ It gives a lift to any theatre when the prime minister turns up in the audience. So it was on Wednesday when John Major, accompanied by wife Norma, slipped into the National Youth Theatre's revival of Joan Littlewood's *Oh What a Lovely War*.

A symbolic choice, perhaps, given the coincidence with the IRA's ceasefire. Littlewood's piece begins with a flush of nationalism at the outbreak of the first world war, but ends with a popular rejection of war of any kind.

Pearly king

■ Is an interesting culture change imminent at Time magazine, the weekly flagship of the Time Warner empire?

Norman Pearlstine, former executive editor of the Wall Street Journal, is being tipped by the New York Times to take over as editor in chief of Time Inc, the parent of Time, Fortune, Sports Illustrated, and People.

Pearlstine has interesting social and personal connections. His third wife, Nancy Friday, has made a career from writing up (anonymous) sexual fantasies. Her *My Secret Garden* (1979) regaled us with women's imaginings, while



Is this to be a permanent cessation of balacava, Eumom?

Men in Love (1980) crossed the gender divide for the same purpose.

Francis Deely, in his entertaining book *The Power and The Money, Inside the Wall Street Journal*, quotes Pearlstine saying to him that Nancy had "emotionally emancipated" him.

Pearlstine is far too glibly to be mistaken for another Henry Luce. Even so, Time hacks might welcome his arrival if he puts a stop to the long running rumours that the mags are up for sale.

Indeed, Deely reckons that when Pearlstine took over as managing editor of the WSJ, in the first 10 months he incurred \$11.4m in unexpected salary costs, by hiring

143 new staff instead of the budgeted 35. Dust off those CVs...

Peace n' pizza

■ You can't fault the Italians for entrepreneurial spirit. With the ink hardly dry on the IRA's ceasefire announcement, the FT's Milan office was rung up yesterday by one would-be fast food magnate.

The caller, currently employed by a Japanese bank, was wondering how she and her husband, who works in a TV repair shop, should go about setting themselves up in Belfast to sell *fozucca* - a northern Italian pizza-like dough - to the peace-loving inhabitants.

As it turns out, Sonia Palatto and Marco Di Fiore had already decided Belfast was the place for them, ceasefire or no ceasefire, and were preparing to chuck in their jobs and indulge their passion for cookery. "We just went there on holiday and loved it," explained Palatto.

Native's return

■ Love him or hate him, Ian Kerr, who penned *L'Eminence Noire* for the pages of International Financing Review, the bible of the Euromarkets, brought a biting wit to the antics of friend and foe.

Since April, when he was lured to rival Euroweek, there has been something of a void at the staggeringly expensive (£2,000 plus

per annum) yellow-jacketed weekly.

Re-enter Peter Krigsman, 39, former editor-in-chief of IFR, who left last autumn, and has now been rehired as a humble title-tattle recycler. Unlike Kerr, who had headed fixed income research at Kidder Peabody, Krigsman has never seen the market from the inside. A sometime diarist at Accountancy Age - "funnier than it sounds" - he has his contacts, however, not least Kerr's enemies, from whom he would hear faithfully every Monday morning at IFR.

But he will have a hard act to follow in the bitchiness and smotherly stakes, not to mention matching Kerr's penchant for coining nicknames which stick. CS First Boston's Alan "Weetabix" Wheat, his spouse Mrs Shredded Wheat, and Christopher Robin (the gangly new London boss of UBS David Robbins) are just a few of the big cheeses who have been rechristened by Kerr.

Even so, if Krigsman focuses on the current movers and shakers, rather than yesterday's men, he should be able to mine a tolerably untapped seam.

Veggie-burgers

■ Norwegian judges have deemed it insulting to call a police officer an onion, fining a motorist Nkr4,000 for having done so.

Maybe the criminal should have opted for safety and simply called the officer a Swede?

IN BRIEF

Daf's offspring produce growth

Dutch and UK truck companies created out of the collapse of the Daf group last year are increasing their profits and making a first significant investment in a new range.
Leyland Trucks Manufacturing, the UK truck maker, says it will spend £25m (\$38.25m) to design and develop a medium-sized truck range. Most of the new vehicles will be for delivery to Daf Trucks, the Dutch truck maker. Page 20

Body Shop exposed fails to shock
The long-awaited article that has helped trigger controversy over the image of Body Shop International, the cosmetics and toiletries group, was published yesterday to the amusement of investors and ethical researchers. Some commentators expressed doubts about the potency of its revelations, while Body Shop flatly rejected its contents. Page 22

Amcor shrugs off competitive markets
Profits at Amcor, the Australian paper and packaging group, rose to A\$36.9m (\$25.1m) in the year to June, despite fierce competition. Page 20

Western Mining falls 26%
Western Mining Corporation, the Australian mining group, reported a fall of 27.8 per cent in equity-consolidated profit after tax but before abnormal items to A\$19.7m (\$13.9m) in the year to June. Page 20

Net income up at Sandoz
Sandoz, the Swiss pharmaceuticals, nutrition and chemicals group that has just acquired Gerber Food Products of the US, raised net income 2 per cent in the first half to SF1.01bn (\$760m). Page 19

Canadian banks ahead in third quarter
Canada's two biggest banks, Royal Bank of Canada and Canadian Imperial Bank of Commerce, posted sharply higher third quarter earnings, driven by strong lending activity, rising fee income, tight expense control and lower loan losses. Page 19

Speculation persists around NBC
Speculation about a possible takeover of the NBC television network continued after a senior NBC executive failed to issue an outright denial that General Electric, NBC's parent group, may sell all or part of the network to Time Warner. Page 19

Telefonica rises at half-way
Telefonica, the state-controlled Spanish telecommunications group and the biggest company on the Madrid stock exchange, lifted first-half consolidated net profits by 4.7 per cent to Ptas20n (\$397m) on the back of increased demand, lower financial charges and increasing international business. Page 19

Rolls Royce lifts profits 29%
Rolls-Royce, the aero engine and industrial power group, yesterday reported a 29 per cent rise in pre-tax profits for the first half of 1994 despite a 14 per cent decline in sales. Page 22

Patchy report from Vickers
Shares in Vickers fell 7p to 185p yesterday after the engineering group, which makes tanks and Rolls-Royce cars, said it was seeing only a patchy recovery. Page 22

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Chief price changes yesterday

FRANKFURT (DM)		Russell	481.9 + 15.9
Dax	85 + 11	Imv France	481.9 + 15.9
Alcoa	178 + 10	Palto	150 + 26
Autocentra	225 + 10	Costs Wylea	55 + 5
BASF	180 + 10	Novartis (Lyon)	55 + 5
Body Shop	225 + 10	Novartis (Lyon)	55 + 5
Compas	225 + 10	Novartis (Lyon)	55 + 5
DNI Holding	225 + 10	Novartis (Lyon)	55 + 5
Dal	225 + 10	Novartis (Lyon)	55 + 5
Drogmiller	225 + 10	Novartis (Lyon)	55 + 5
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FLS Industries	225 + 10	Novartis (Lyon)	55 + 5
Fryles	225 + 10	Novartis (Lyon)	55 + 5
Harcort	225 + 10	Novartis (Lyon)	55 + 5
Hartstone	225 + 10	Novartis (Lyon)	55 + 5
Hoare Govett	225 + 10	Novartis (Lyon)	55 + 5
Iberdrola	225 + 10	Novartis (Lyon)	55 + 5
Independent News	225 + 10	Novartis (Lyon)	55 + 5
Investor	225 + 10	Novartis (Lyon)	55 + 5
Kolbenschmidt	225 + 10	Novartis (Lyon)	55 + 5

London (Pence)

Alcoa	255 + 18	Tottenham Hops	151 + 7
Autocentra	225 + 10	Williams Hops	365 + 10
BASF	180 + 10	Palto	150 + 26
Body Shop	225 + 10	Costs Wylea	221 + 8
Compas	225 + 10	Novartis (Lyon)	55 + 5
DNI Holding	225 + 10	Novartis (Lyon)	55 + 5
Dal	225 + 10	Novartis (Lyon)	55 + 5
Drogmiller	225 + 10	Novartis (Lyon)	55 + 5
El Aquitaine	225 + 10	Novartis (Lyon)	55 + 5
Eng & O'sess Props	225 + 10	Novartis (Lyon)	55 + 5
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Investor	225 + 10	Novartis (Lyon)	55 + 5
Kolbenschmidt	225 + 10	Novartis (Lyon)	55 + 5

ABN Amro goes global with Hoare Govett

By John Gapper in London and Ronald van de Krol in Amsterdam

Hoare Govett, the London stockbroker firm acquired by the Dutch bank ABN Amro two years ago, is to be renamed ABN Amro Hoare Govett as part of the bank's effort to create a global investment banking arm.
ABN Amro, the seventh largest European bank, is to use the name for all its equity broking, fixed income and corporate

finance operations around the world provided that it can overcome regulatory hurdles in some countries.
The bank has been building a network of brokers in Europe, including the Irish firm Riada Stockbrokers, CMO in Milan, and Massonand-Fontenay-Kervin in Paris. Along with the bank's own broking operations, these may be re-named next year.
The use of both names is similar to the strategy used by Union Bank of Switzerland when it

acquired the broker Phillips & Drew in 1988. The London investment banking arm was known as UBS Phillips & Drew until it was re-named UBS this year.
However, ABN Amro's board has decided to extend the Hoare Govett name to fixed income and corporate finance operations because it regards it as a stronger international brand name than its own, which was created in a merger in 1990.
ABN Amro is keen to ensure that Hoare Govett's relations

with London merchant banks are not affected by the use of the name for corporate finance activities. The London corporate broking arm will still be known as Hoare Govett.
Mr Rijnhard van Tets, ABN Amro's board member for global equity operations from Hoare Govett in London this year, and is now trying to build up its European corporate finance business. The use of the combined name ABN Amro Hoare Govett could be used for marketing purposes later this year. But it is thought that the bank could have regulatory difficulties in adding Hoare Govett to the name of its US broking arm.

Although the fixed income and corporate finance arms will still be run from Amsterdam, ABN Amro wants to expand corporate finance operations in London. It will provide finance advice and equity underwriting for large European companies. The bank also plans to expand its broking presence in Asia.

BASF's drugs arm turns to German generic market

By Christopher Parkes in Frankfurt and Paul Abrahams in London

BASF, the German chemicals group, is attempting to revive the fortunes of its Knoll pharmaceuticals division by diversifying into non-patented generic drugs in the German market.
A new distribution and marketing company, BASF Generics, will start operating early next year aiming to generate DM100m (\$63.5m) in sales before the end of the decade.

ing and largest market for non-patented generic medicines in Europe, accounting for nearly 40 per cent of the \$4.85bn market, according to a recent report.
In 1992, generic drugs accounted for about 29 per cent of all German prescriptions, making the sector worth about 22 per cent of all prescription sales at about DM2.67bn.
BASF is the last of Germany's big three chemical groups to gain a foothold in generics.

Talks are also under way with potential partners, indicating further likely moves, possibly into other markets.
Knoll recently bought the rights to around 80 out-of-patent drugs from Hexal Pharma, one of Germany's leading generics makers. It also took an option on a further 80 which are expected to be licensed for use in Germany soon.
The creation of BASF Generics is the biggest step yet in a strategy developed at the end of last year, when Knoll reported its first loss, of DM6m on sales of DM2bn. A fall of more than 40 per cent in US earnings was blamed on price pressure from generic competition.
Germany is the fastest-grow-

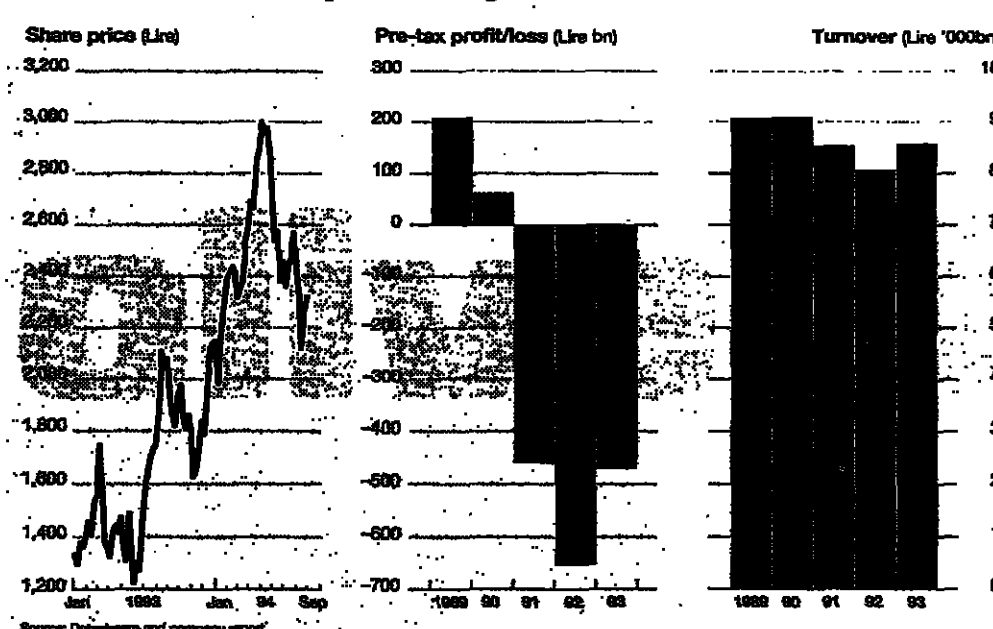
ing and largest market for non-patented generic medicines in Europe, accounting for nearly 40 per cent of the \$4.85bn market, according to a recent report.
In 1992, generic drugs accounted for about 29 per cent of all German prescriptions, making the sector worth about 22 per cent of all prescription sales at about DM2.67bn.
BASF is the last of Germany's big three chemical groups to gain a foothold in generics.
In March, Bayer spent \$130m on a 28.3 per cent stake in Schein, a privately-owned US group. That followed last year's \$466m purchase by Hoechst of a 51 per cent stake in Copley Pharmaceuticals, another US company.
Earlier this year US group Bristol-Myers Squibb acquired a 25 per cent stake in Azupharma, a German generics subsidiary of Gehe. In June, Merck, the German group, announced its intention to acquire a 51 per cent stake in Amerpharm, an international generic company based in the Netherlands.
*Generic Pharmaceuticals: implications for the global pharmaceuticals industry, Financial Times Business Information, 071 814 9770, £298.
Lex, Page 16

Andrew Hill reports on 10% fall in Italian computer group's shares

Mr Corrado Passera, chief executive of Olivetti, yesterday sought to reassure shareholders and the market about the financial and industrial health of the Italian computer group, after a week in which the value of their investment has fallen by nearly 10 per cent.

Olivetti offers calm words after its bruising

Olivetti falters despite steady sales



Computer's reductions. Mr Passera pointed out yesterday that PCs represented only 20 per cent of Olivetti's L8,600bn annual turnover (more than 60 per cent of group sales come from the systems and services activities), and that the average price reduc-

lio had suffered a drop in value, and that investments - held to cope with unexpected restructuring costs - would suffer a one-off loss.
● Capital raising. Mr Passera said the group was not expecting to increase its capital in order to

1990. At the group's annual shareholder meeting in May, Mr Carlo De Benedetti, chairman, said Olivetti was "preparing to reap the benefits of a sweeping structural reorganisation".

Olivetti is 'preparing to reap the benefits of a sweeping reorganisation' says Mr Carlo De Benedetti, chairman

tion on PCs was about 12 per cent - "not far from what we foresaw in our budget and linked to a drop in component prices and to efficiency improvements".
● Extraordinary losses on share and bond investments. Mr Passera admitted that during 1994 the group's fixed interest portfolio

investments in Italy's second cellular telephone network by the Omnitel-Pronto Italia joint venture, of which Olivetti is the main shareholder.
Last year Olivetti lost L485bn, compared with a net loss of L650bn in 1992, but sales increased for the first time since

However, the market's brusque treatment of Olivetti shares this week is a clear indication to Mr De Benedetti of what will happen if he fails to deliver on those promises. He probably feels the market's discontent more than most. In the last week, shares in the De Benedetti's two quoted holding companies - Cir, Olivetti's biggest shareholder, and Cofide, with a large stake in Cir - have themselves declined by 10 per cent and 8 per cent respectively. When the market shakes Olivetti, the whole tree trembles.

Ladbroke's gamble



Peter George, chief executive of Ladbroke, the UK gaming group, bets on a £50m casino deal after an 11 per cent fall in profits. Page 18

Computer shares fall on AST warning

By Louise Kehoe in San Francisco

Computer shares on Wall Street fell yesterday after a profit warning from AST Research, the world's fifth largest personal computer maker, prompted concerns about a possible slowing of growth in PC sales.

Price cuts by competitors have forced AST to make "significant price reductions on existing products to protect market share, as well as new product introductions which will have to be priced more aggressively than originally planned", he added.

Just a month ago, AST reported record results for 1994, claiming sales growth of four times the industry average. Revenues for the year were \$2.4bn, up from \$1.4bn, while net income was \$53.5m, or \$1.59 per share, compared with a net loss after restructuring charges of \$53.7m, or \$1.72 per share.
Rumours that Compaq, the PC market leader, was trimming orders for PC components also fuelled concerns about PC sales. Compaq, however, said that changes in component orders were not unusual and did not reflect any change in the company's outlook on the PC market.
Dataquest, a California market research firm, yesterday reiterated its forecast that worldwide PC unit sales will rise 18.3 per cent to 45m units this year.

AST pointed to delays in new product introductions and recent sharp price cuts by Compaq, IBM and Digital Equipment. "We have encountered several unanticipated product development delays, component constraints and delivery issues," said Mr Sadi Qureshey, AST chairman and chief executive.

Elf blames oil prices for 10% fall

By David Buchanan in Paris

Elf Aquitaine, the French oil group, yesterday blamed a 10 per cent drop in first-half net profits, to FF1.2bn (\$222m) on lower crude oil prices and refining margins and higher financial charges.

Mr Philippe Jaffré, chairman, said uncertainties over the price of oil and the value of the dollar made full-year forecasts difficult. In 1993 Elf showed a FF1.4bn net profit in the first six months but turned in FF1.07bn for the full year.
"We are still on course in our strategy to concentrate on our core sectors of oil, chemicals and health, and to improve our competitiveness to the level of other oil majors," he said. After rapid expansion in recent years, Mr Jaffré said the group's goal now was to consolidate its position by cost-cutting and sales of non-core businesses.

Capital spending was 13 per cent lower in the first half, while the French group has cut its stake in the Lemna refinery project in eastern Germany from 100 to 43 per cent. Mr Jaffré said asset sales of FF1.5bn in the first half were "a bit slower than I had hoped", but he predicted sales of FF5bn-6bn this year and about the same next year.
Mr Jaffré, who headed the Crédit Agricole bank before he took over Elf last year, said he had halted the five-year rise in debt which now stood at 46 per cent of own funds, against 50 per cent last December.

Elf said profits on chemicals tripled in the first half and its health activities remained stable. Sanofi, its pharmaceuticals and cosmetics subsidiary, reported first-half net earnings of FF460m, up 0.9 per cent. Evolutionary approach, Page 20

DENBY

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INTERNATIONAL COMPANIES AND FINANCE

Leyland Trucks to invest £25m in new range

By John Griffiths in London

Dutch and UK truck companies created out of the collapse of the Daf group last year are increasing their profits and making a first significant investment in a new range. Leyland Trucks Manufacturing, the UK truck maker rescued by a management buy-out last year, says it will spend £25m (\$38.25m) to design and develop a medium-sized truck range to be built at its Leyland, Lancashire, headquarters.

Most of the new vehicles will be for delivery to Daf Trucks, the Dutch truck maker also revived - with Dutch and Belgian government finance - from the Daf collapse.

The UK company has a long-term contract with the revived Dutch manufacturer under which Daf Trucks sells and services all Leyland-produced trucks in Europe.

The new truck range, to be called the 55 Series, will replace the Dutch-built Daf 1300 and 1700 vehicles, providing Leyland with its first-ever continental sales in the

medium, 11-15 tonnes sector of the European truck market.

The announcement came as Daf Trucks reported a net profit for the first half of £199.2m (\$22m) on turnover of £199.2m. Daf, in March reported a net profit of only £10.8m in a truncated first financial year.

Mr Cor Baan, Daf chairman, told a meeting of the company's 3,654 employees in Eindhoven that the results "are in accordance with the general lines of the business plan and they also reflect the growing confidence in the company".

About a week ago Leyland Trucks' chief executive, Mr John Gilchrist, also reported that the UK company had made a pre-tax profit of £8.4m for its first 11 months to end-April on a turnover of £148.6m.

Daf delivered 7,282 trucks in the first half of the year, 4,507 from the Eindhoven plant and 2,775 comprising 45 Series vehicles from Leyland. Mr Baan said Daf had marginally increased its share of the European truck market over 6 tonnes to 6.8 per cent.

Montedison simplifies Finagro investment

By Andrew Hill in Milan

Montedison, the Italian industrial conglomerate, plans to take direct control of Eridania Béghin-Say, its agro-industrial subsidiary, by absorbing Finagro Agromobiliare, the vehicle for the group's Eridania shares.

The merger will further simplify the structure of the sprawling empire inherited by the new board of Ferruzzi Finanziaria (Ferruzzi), Montedison's parent, following last year's near-collapse of the group. The structure contains some 1,800 companies, many of them dormant investment vehicles.

Finagro is quoted on the Milan stock exchange, but nearly 95 per cent of its shares are owned by Montedison or Ferruzzi. It controls just under 50 per cent of Eridania, which is quoted in France and Italy, but some 63 per cent of the voting rights.

If the operation is approved at a special Montedison shareholder meeting in October, Finagro's few remaining shareholders will be offered Montedison shares in exchange for their holdings. Montedison also plans to absorb four tiny financial subsidiaries which house part of the group's Finagro stake.

Ladbroke buys London casinos

Ladbroke Group yesterday made a £50m (\$75m) bet on the future of London casinos, returning to the tables after a 15-year absence, writes Peggy Hollinger in London. The purchase of Maxim's, Golden Horseshoe and Charlie Chester's marks the first step in Ladbroke's strategy to increase its presence in the global gaming business.

The deal is subject to approval from the UK Gaming Board. News of the acquisition was accompanied by the announcement of an 11 per cent fall in interim profits before exceptional items to £51.3m. Earnings before exceptional items were 18 per cent lower at 2.96p.

East German energy assets sold

By Judy Dempsey in Berlin

Eastern Germany's largest electricity utility and its biggest brown coal field have been sold to a consortium headed by RWE Energie, the German utility, the Treuband privatisation agency announced yesterday.

The sale, which will be officially sealed next week, paves the way for a DM41bn (\$27.5bn) investment programme by west Germany utilities in eastern Germany's energy sector. It also secures a future for

brown coal, despite the environmental costs, and particularly in an election year when unemployment in eastern Germany is one of the key issues.

Although the Treuband will not confirm the selling price until next week, energy officials yesterday said RWE, PreussenElektra and Bayernwerk paid about DM5bn for Veag, eastern Germany's largest utility. The former state monopoly under the former communist regime, had a

workforce of 28,000. That has been reduced to 14,500, and is expected to fall further.

A consortium led by Rheinbraun, RWE's brown coal offshoot, and including PreussenElektra and Bayernwerk, bought the Laubag brown coal fields for an initial payment of DM2.1bn and a commitment to invest more than DM6bn over the next 20 years.

Laubag, which now employs fewer than 12,000, compared with more than 50,000 before German unification, will fuel

most of Veag's 12,300-megawatt capacity. Annual coal production will total about 55m tonnes, which is considered the minimum for the fields' economic viability.

However, the long-term economic prospects for Laubag and Veag will depend on the consortium's ability to withstand increasing pressure from the expanding gas market and falling energy consumption in eastern Germany. Gas is quickly becoming a substitute for brown coal.

Volvo to take over German bus maker

By Kevin Done

Volvo, the Swedish car and commercial vehicle maker, is taking over Drögmüller, the German bus manufacturer, in a move which accelerates the rapid concentration of the European bus industry.

Mr Björn Larsson, president of Volvo Bus, said the takeover of Drögmüller, a maker of luxury tourist coaches with a turnover last year of DM55m (\$33m) and a workforce of 250, was an important step in the Swedish group's effort to break into the German market, which is dominated by Mercedes-Benz and MAN, the domestic German commercial vehicle makers.

The big European truck and bus makers are moving quickly to consolidate their hold on the small, and hitherto independent, bus and coach body builders in Europe, in order to guarantee the outlets for their chassis and drivelines (engines and gearboxes).

The Volvo acquisition is the latest in a flurry of recent deals, most notably Mercedes-Benz's takeover of Kässbohrer, the German coach maker which markets its products under the Setra brandname.

In recent days Scania, the Swedish truck and bus maker, has taken over DAB, a Danish body builder, while Volvo agreed the takeover of Aabenraa, another Danish bus body builder, from Kässbohrer, shortly before the German group was itself acquired by Mercedes-Benz. Separately, Berkhof, the Dutch bus and coach maker has taken over its smaller, troubled Belgian rival Jonckheere.

Volvo had tried for two years to break into the German coach market, using Berkhof bodies on its own chassis but with little success, said Mr Larsson. Drögmüller was the last independent German coach builder and offered the last acquisition opportunity.

Volvo was aiming to increase its share of the German bus and coach market to more than 5 per cent in the next two to three years from less than 1 per cent at present, said Mr Larsson.

Mercedes-Benz unveils R&D strategy

By Kevin Done, Motor Industry Correspondent, in Hannover

Mercedes-Benz, the world's leading truck maker, is planning to invest more than DM5bn (\$3.16bn) in the research and development of new commercial vehicles between 1994 to 1998, Mr Helmut Werner, chief executive, said yesterday.

The group will launch two van ranges in Europe next year, and introduce a new-generation heavy truck range in 1998.

Mercedes-Benz is embarking on an aggressive expansion of its light commercial vehicle operations in Europe, with the

aim of increasing its van production capacity by between 40 and 50 per cent during the next two years, to around 150,000 a year from 100,000 in 1994.

It also plans to internationalise its light commercial vehicle operations. It wants to start producing in South America, Mr Bernd Gotschalk, managing director of the commercial vehicle division, said yesterday.

The new T1 medium-weight van range (2.5-4.6 tonnes gross vehicle weight) to be launched in Europe next year will also be produced in Argentina, starting in 1995.

In Europe, the capacity for

this vehicle is being increased from around 75,000 to 100,000, competing with rivals such as the Ford Transit and the Volkswagen Transporter.

In Argentina, Mercedes-Benz will build toward capacity of between 20,000 and 25,000 units a year, enough to supply the Brazilian market as well.

The group has begun negotiations on two ambitious joint ventures in China for the production of heavy trucks and buses and coaches, said Mr Werner.

It has entered a feasibility study with Yangzhou Motor Coach Manufacturing (YMC), the biggest Chinese bus and

coach producer, for the formation of a joint venture. The target here will be the production of up to 12,000 bus chassis and 6,000 large coaches a year.

Such an operation would exceed Mercedes-Benz's existing Brazilian bus and coach operations, which produced 14,600 vehicles last year. It would also be twice as big as its European bus and coach operations in Germany and Turkey.

Separately, it is investigating the formation of a joint venture to produce heavy trucks (above 15 tonnes) in China with its current licensee partner, Norinco.

Ares-Serono suffers 39% decline

By Ian Rodger in Zurich

Ares-Serono, the Geneva-based biotechnology drugs group, has reported another sharp fall in profits in the second quarter.

Net income from continuing operations fell 39 per cent to \$14.4m.

The group, which develops hormones for stimulating human fertility and beta interferon-based drugs for multiple

sclerosis and other diseases, has continued to step up its research and development spending in spite of weaker overall sales.

Sales in the second quarter were down 3 per cent to \$168.2m, as a 50 per cent slide in sales in Italy offset substantial gains elsewhere. Italy accounts for about a fifth of group sales, and a few important Ares products have been

removed from the list of those the government will pay for.

Meanwhile, R&D spending jumped 38.6 per cent in the second quarter to \$37.3m.

In the first half, sales were down 5 per cent to \$314.7m and net income from continuing operations tumbled a third to \$28.05m. The group took a \$3.6m charge on the sale of its diagnostics division in the second quarter.

Privatised Austrian engineer ahead

By Ian Rodger

VA Technology, the Austrian plant engineering group privatised and floated in May, has reported first-half net income of Sch288m (\$26m), up 68 per cent year-on-year.

Pre-tax profit was 50 per cent

higher at Sch307m on sales of Sch10.2bn, up 40 per cent. New orders were 10 per cent ahead to Sch17.1bn and the order backlog at end-June stood at Sch56.8bn, 5 per cent higher.

The group said the largest part of its turnover would be achieved in the second half,

and forecast higher full-year profits. "This will enable a shareholder-friendly dividend policy," it said.

The Austrian government sold 51 per cent of the shares in VA Tech, formerly part of the Austrian Industries combine, in May, raising Sch6.9bn.

Bidders line up for Canadian insurance unit

By Robert Gibbons in Montreal

Canadian Imperial Bank of Commerce and Great-West Life are believed to be top contenders for Confederation Life's domestic group life and health business.

The successful bidder was expected to be announced by Confederation's liquidator Peat Marwick Thorne. Confederation's domestic group business generated premium income of Cdn\$1bn (US\$700m) last year and could fetch up to Cdn\$2bn.

Metropolitan Life was also a bidder, but industry sources said it was not likely to win.

Great-West, controlled by Power Corp of Canada, bought Confederation's US group business just after Confederation was seized by federal regulators on August 11.

SKANDIA INSURANCE COMPANY LTD INTERIM REPORT FOR THE PERIOD JANUARY 1 - JUNE 30, 1994

- Gross premium income rose by 35 per cent during the first half of 1994, to MSEK 27,315. The improvement is entirely attributable to the unit linked and life assurance operations, whose premium volume grew by 106 per cent.
- The insurance result for the group during the first half of 1994 amounted to MSEK 378, an increase of 31 per cent compared with the same period a year ago.
- The operating result, before adjusting the value of bonds to the lower of cost or market value, amounted to MSEK 529 (572).
- Net asset value on June 30, 1994, amounted to MSEK 15,379, or SEK 150 per share.
- The rights issue approved by the Annual General Meeting contributed to an inflow of capital totalling MSEK 2,705 net. The number of shares increased to 102,354,252 as a result of the rights issue.
- At the Annual General Meeting in April 1994, the decision was made to ease Skandia's voting rights limitation in the Articles of Association. Now, no one may vote for more than five per cent of the shares represented at a Shareholders' Meeting.
- SkandiaBanken will begin operating in October 1994 and will focus primarily on deposits and other banking services for individuals.

Skandia is an international corporation engaged in insurance and financial services, with its home market in the Nordic countries. Operations are conducted in 23 countries in Europe, Asia, and North and South America. Skandia's shares are listed on the stock exchanges in Stockholm, Oslo, Copenhagen and London.

A complete interim report is available upon request from Skandia, Information Department, S-103 50 Stockholm. Tel. +46-8-788 1000.



SUMMARY OF RESULTS

	1994	1993
MSEK	6 mos	6 mos
Premium income, gross	27,315	20,251
Non-life insurance and reinsurance	13,194	13,412
Life insurance	14,121	6,839
Operating result before adjusting the value of bonds to the lower of cost or market value	529	572
Management operating result before unrealized changes in the value of bonds	-550	1,161
Insurance result, non-life insurance and reinsurance	378	288
Management operating result, life assurance	321	197
Total assets (SEK billion)	154.9	138.5
Net asset value (SEK billion)	15,379	13,188
Solvency margin, %	63	60



Shanghai Petrochemical Company Limited Interim Results 1994

Financial Highlights

	1994	1994	1993
	RMB'000	HK\$'000	RMB'000
	(unaudited)	(unaudited)	(unaudited)
Turnover	4,305,569	3,846,319	4,267,233
Profit before taxation	909,157	812,182	675,271
Taxation	136,374	121,828	101,378
Profit after taxation	772,783	690,354	573,893
Interim dividend	262,000	234,054	200,000
Retained profits	564,845	504,596	373,893
Earnings per share	RMB0.118	HK\$0.105	RMB0.143

In the second half of the year, the Company should benefit from continued economic growth in China and the strong demand for its products. The Company's decision not to shut down its main facilities this year will result in an extended operational cycle. The utilization of the Company's major facilities is expected to increase and with it the output of major products. The Company expects demand for most petrochemical products to be strong during the second half of 1994. While further government controls on prices including those for petrochemical products are likely, the Company believes that they should not have a negative impact on the operations of the Company. The increase in the prices of crude oil since May will result in higher production costs for the Company during the second half of the year. However, for the two months to the end of June the higher prices for its product, including those for petrochemical products, offset the effect of increased crude oil prices. The Company plans to speed up its technology improvement programme and to continue improving its product quality and production efficiency. It also intends to increase the production of higher-margin downstream petrochemical products.

Wang Jiming
Chairman of the Board and President
29 August 1994

Notes:

(1) Turnover

With the implementation of value added tax, turnover is treated as income excluding tax. For ease of comparison, the turnover figure of RMB4,652 million in the 1993 interim results which includes tax has been adjusted to RMB4,267 million. The cost of sales is calculated on the basis of the value of raw materials purchased excluding value added tax.

(2) Retained profits

Retained profits for the period include the profit after taxation, after deducting the recommended dividend, of RMB510,783,000 and retained profit of RMB54,062,000 carried forward from 1993.

(3) Earnings per share

The calculation of earnings per share for the six months ended 30th June 1993 is based on the 4 billion shares issued as at 30th June 1993.

The calculation of earnings per share for the six months ended 30th June 1994 is based on the 6.55 billion shares issued as at 30th June 1994.

(4) Hong Kong dollar equivalents

For the convenience of the reader, amounts in Renminbi (RMB) have been translated into Hong Kong dollars at the rate of HK\$1.00 = RMB 1.1194, being the average of the buying and selling rates prevailing at the China Foreign Exchange Trading Centre at the close of business on 30th June 1994. No representation is made that the Renminbi amounts could have been, or could be converted into Hong Kong dollars at that rate.

If you wish to receive further information on Shanghai Petrochemical or supplementary information on the Company's interim results reconciled in US GAAP please fax your request to The Rowland Company at (852) 543-3030.

Telefónica
17% to 1st
halfway

Net income up
sandoz in first

Canadian banks
surprised in third p

Loss deepens at

INTERNATIONAL COMPANIES AND FINANCE

Telefónica rises 4.7% to Pta52bn at halfway stage

By Tom Burns in Madrid

Telefónica, the state-controlled Spanish telecommunications group and the biggest company on the Madrid stock exchange, lifted first-half consolidated net profits by 4.7 per cent to Pta52bn (\$397m) on the back of increased demand, lower financial charges and increasing international business.

The increased group profits reflected in particular the performance of Telefónica Internacional (Tisa) which has invested strongly in acquiring Latin American telecommunications companies. Talks are taking place that aim to bring both GTE and Unisource into Tisa as large shareholders.

Results at the Telefónica parent company were up by just 1.7 per cent to Pta44.8bn, in spite of a 6.5 per cent rise in operating income and a 7 per cent fall in financial charges.

Analysts believe the parent company could be keeping its net profits low to prod government regulators into raising tariff charges.

Improved first-half results, reflecting the incipient domestic recovery, were also posted by Iberdrola, the private sector electrical utility, and by Tabacalera, the government-controlled tobacco manufacturer and distributor.

Iberdrola reported a 96 per cent jump in its net profits over the first six months of the year to Pta49.7bn but this sharp increase included extraordinary income of Pta25.2bn realised through the disposal of its Barcelona-based subsidiary, Hidroeléctrica de Cataluña, to the state-controlled utility Endesa.

Iberdrola's net profits, without this extraordinary item, rose by 11.7 per cent due to energy demand, lower expenditure and an 18 per cent fall in financial charges brought about by falling interest rates and reduced borrowing.

Tabacalera, which is 52 per cent state-owned, raised its net first half group profits by 32.5 per cent to Pta5.7bn.

The increase was due to extraordinary income of Pta2.5bn realised through the disposal of its food division Royal Brands to Nabisco of the US, to a 64 per cent drop in financial charges and a 23 per cent rise in tobacco sales.

The sharp jump in sales was largely due to government action in curbing cigarette smuggling.

Speculation on NBC TV bid persists

By Patrick Harverson in New York

Speculation about a possible takeover of the NBC television network continued yesterday after a senior NBC executive stopped short of issuing an outright denial of reports that General Electric, NBC's parent company, has been considering selling all or part of the network to Time Warner.

Mr Robert Wright, president of NBC, would only say that a report that NBC and Time Warner had been negotiating a sale of the network for \$2.5bn was not accurate. A spokesman for Time Warner, meanwhile, said the group would not comment on the story.

Mr Wright's comments failed to dampen takeover speculation on Wall Street, which has been buzzing with rumours about upheaval in the US network television market.

The latest talk of a NBC takeover was accompanied by reports that Walt Disney has been negotiating to buy the CBS network, which earlier this year failed to merge with the QVC television home-shopping company.

The takeover rumours lifted GE and CBS's share prices yesterday, even though most leading stocks on Wall Street were lower. GE climbed 4% to \$304, and CBS rose 6% to \$332, while Time Warner fell 4% to \$41.

This is not the first time GE is reported to have been discussing selling NBC, which it bought in 1986 as part of the \$6.3bn acquisition of RCA Corporation.

On previous occasions, Mr Jack Welch, GE president, had insisted the network was not for sale, most recently last November. Yesterday, there was no comment from Mr Welch.

Although Mr Welch has said he wanted NBC to remain part of GE, the diversified industrial group is believed to be unhappy with the network's recent performance.

NBC's revenues last year were down from 1993 levels, it has had the lowest ratings of the big three networks for the past three years, and has suffered a string of recent mishaps, including a staged accident in a television news report on General Motors pick-up trucks.

If Time Warner is interested in buying NBC, it is understandable, given that the entertainment group is eager to develop its television interests and is preparing to launch its own broadcast network.

Any deal between GE and Time Warner over NBC would run into regulatory problems. Certain limits are placed on cross-ownership of broadcast and cable TV interests and Time Warner has extensive cable TV operations.

Charge puts Brambles into the red

By Nikki Tait in Melbourne

Brambles, the Australian transportation group, yesterday announced a \$423.2m (\$317.4m) loss after tax and abnormal items for the year to end-June, a sharp reversal from the previous year's \$165.1m profit.

The damage was done by a \$378.1m abnormal charge, already reported in the first-half and mainly due to the write-off of goodwill at Brambles' US-based waste management operation, Ensocon.

The company said there were no abnormal items in the second half.

Operating profits before abnormal items and tax for the year were \$424.2m, slightly below the previous year's \$439.2m. Brambles said, however, that second-half results were in line with expectations and it had "reached a turning point".

Revenues were little changed at \$2.74bn, against \$2.71bn.

Wallenbergs give a lesson in invisibility

The empire is held in a strong hand, write Hugh Carnegie and Christopher Brown-Humes

A visitor to Stockholm intent on seeking out Europe's premier industrial dynasty would soon discover something striking about the Wallenberg empire. It has no headquarters, no annual report and no corporate logo.

This public invisibility stands in stark contrast to the glittering list of Swedish blue-chip companies which the Wallenberg family controls such as Asea, Electrolux, Ericsson, Astra, Stora, Saab-Scania and SKF.

But it is a key to understanding the way in which the Wallenbergs operate. They deliberately adopt a low-profile approach, shunning the limelight and avoiding a jet-set lifestyle. When they take to the water it is to sail in Stockholm's archipelago rather than to cruise in luxury yachts off the Côte d'Azur. Their style is summed up in the family motto "Esse Non Videre" - To Be, Not To Be Seen.

Their empire is a collection of widely disparate companies gathered under the same umbrella but controlled most often through minority shareholdings. It is the identities of the individual companies which are promoted rather than the common ownership.

However, the invisibility belies the strong hold exercised by the family, headed by Peter Wallenberg, and a circle of trusted lieutenants over a fleet accounting for 40 per cent of the value of the Stockholm Stock Exchange.

"They will always be strong owners. They want to control their companies," says a former Wallenberg director.

This rule through a close-knit network which acts as a kind of super-board has been the Wallenbergs' traditional way of managing the empire.

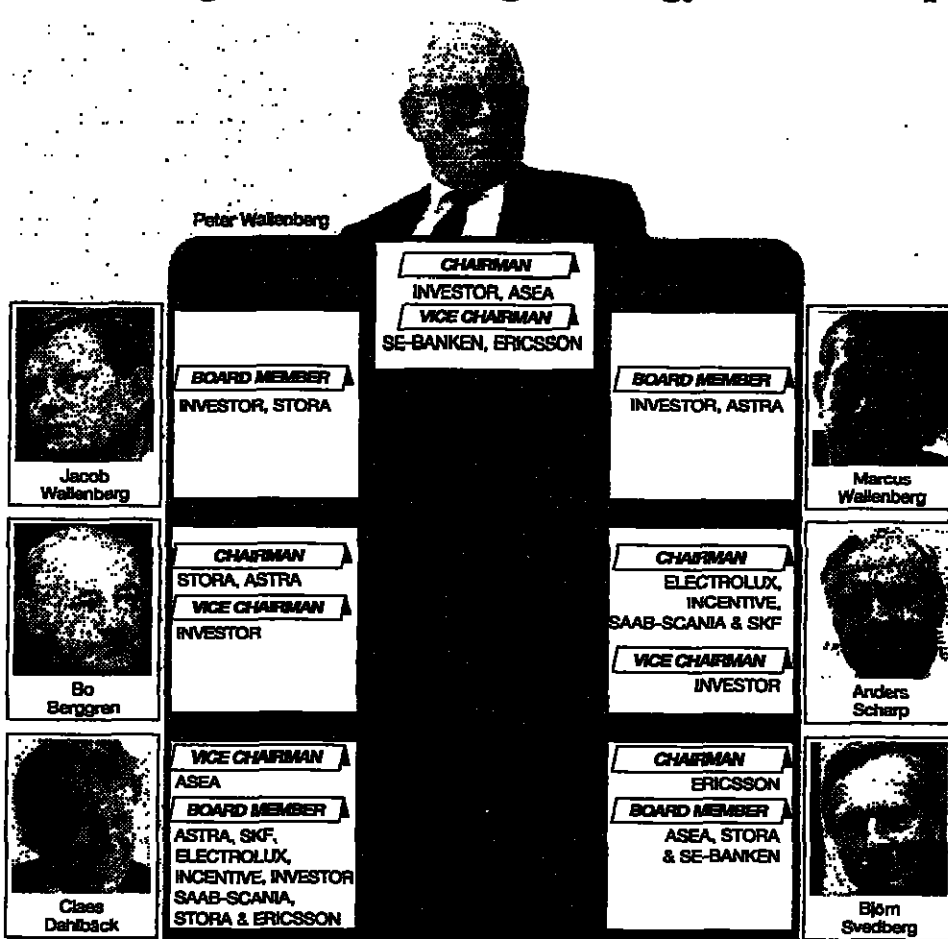
It operates largely informally through frequent meetings in offices of the key companies scattered around Stockholm's handsome waterfront, through daily telephone calls between the main protagonists and through a regular round of discreet social gatherings.

At the pinnacle stands Peter Wallenberg, aged 58. Alongside him in what the former director calls "an inner, inner circle" are his appointed dual heirs, his son Jacob and his nephew Marcus, both in their late 30s.

Today, the other key members of the network include Bo Berggren, chairman of Stora, Anders Scharp, chairman of Electrolux, Claes Dahlbäck, chief executive of Investor, the family's core holding company, and Björn Svedberg, chairman of Ericsson and chief executive of Skandinaviska Enskilda Banken, the family bank.

Another insider is Percy Barnevik, the chief executive of Asea Brown Boveri, the Swiss-Swedish engineering group which the Wallenbergs half control. However, he appears to play a more independent role, holding chairmanships of Swedish companies outside the Wallenberg sphere.

All this group, with the exception of Björn Svedberg, sit on the board of Investor, which Peter Wallenberg chairs.



But they also meet in overlapping combinations, with one of them usually acting as chairman, across the core Wallenberg companies.

The system is perfectly suited to providing a sheltered habitat within which Peter is grooming Jacob and Marcus to succeed him. They have moved up from lower level jobs within the empire, inside and outside Sweden, to senior executive positions, respectively, in SE-Banken and Investor, and to assume their first board positions.

Peter Wallenberg says the cousins will take over when he decides they are ready. He is using the network to give Jacob and Marcus the chance to gain experience precisely in the way he was denied by his father, who designated Peter's abilities.

Members of the network say it provides a valuable cross-fertilisation of views and strategic guidance for individual companies. But they insist this is distinct from unwarranted interference in day-to-day management, which is left to the executives running the companies.

The Wallenbergs certainly pride themselves in having fostered successive generations of loyal managements who have had the backing to produce long-term results.

One is Ericsson, the telecommunications group, where management under chief executive Lars Ramqvist spent heavily on research and development in the early 1990s - more than 20 per cent of turnover - at the expense of dividends. The pay-off has been Ericsson's present success, especially in mobile telephony.

The network also provides an invaluable service to individual companies, providing access to the Wallenbergs' extensive international business, political and academic contacts.

Peter Wallenberg sits, for example, on Swiss Bank Corp's international advisory board and GM's European advisory council. Similar prestige posts are held by all the inner circle.

These contacts were put to spectacular use in 1991 when Jacob Wallenberg led a move by Investor to raise a \$1.5bn unsecured syndicated bank loan to fund Investor's buy-out of Saab-Scania.

"Do you think you'd get that out of the major banks without having a particular reputation?" says Peter Wallenberg.

But the other side of the coin is the concern that the network is too incestuous and is there mainly to support decision-making by the family.

"When it comes to strategy it is a question in the end for Peter Wallenberg to make the decisions, and he does," says a former insider. "The others are just advisers."

Key issues, he says, are worked out before board meetings by the inner circle.

Some critics worry that the network system ultimately stifles initiative. "In every such constellation, there is a danger they are protecting each other," says Per Olof Edin, chief economist at the LO trade union federation.

The network to date has certainly tended to resist outside intrusions. In 1990, the Wallenbergs responded to a demand for a seat on Saab-Scania's board by Sven Olof Johansson, a corporate raider who had built up a 22 per cent stake, by buying him out.

Today there is a striking discrepancy between the virtual absence of foreigners on Wallenberg company boards and the fact that as much as 50 per cent of the capital of individual companies is held by foreign investors.

This is not a pressing issue now because no single interest has built up a significant voting stake in any company. But it could become so as the state of foreign buying of Swedish shares unleashed by deregulation continues unabated.

This is the second article in a three-part series on the Wallenbergs. The first appeared yesterday.

Net income up 2% at Sandoz in first half

By Ian Rodger in Zurich

Sandoz, the Swiss pharmaceuticals, nutrition and chemicals group that has just acquired Gerber Food Products of the US for \$3.7bn, raised net income 2 per cent in the first half to SF1.01bn (\$750m).

Operating income grew a faster 7 per cent to SF1.36bn on sales up 2 per cent to SF1.82bn, 8 per cent higher in local currencies. But the net financial result tumbled from a SF77m profit to a SF90m loss because of price declines of securities held.

Sandoz expected sales trends in leading markets to remain favourable in the second half and operating income to "continue its upward path".

Gerber would be consolidated from August 25. Mr Raymond Breu, Sandoz finance director, said the baby food group would add \$410m to group sales and \$70m to operating income this year. At net income level, it would have no effect this year or in 1995.

Group volume growth was 4.6 per cent in the first half, with a 10 per cent rise from agricultural chemicals, 5 per cent from construction and 4 per cent from both pharmaceuticals and nutrition divisions.

Prices were squeezed, so the improvement in the operating margin from 15.9 per cent to 16.5 per cent came from volume and cost improvements.

Sales of the pharmaceuticals division were down 1 per cent to SF74.59bn, reflecting government enforced price cuts in some countries and the strong Swiss franc.

Sales of the nutrition division soared 29 per cent to SF1.15bn, largely as a result of acquisitions last year.

Sales in the chemicals and environment sector were flat at SF7.76bn, with gains in agriculture and construction offsetting an 8 per cent slide in chemical sales, especially those to textile and paper makers.

Canadian banks ahead sharply in third period

By Robert Ollibens in Montreal

Canada's two biggest banks posted sharply higher third quarter earnings, driven by strong lending activity, rising fee income, tight expense control and lower loan losses.

Royal Bank of Canada's net profit for the July quarter was C\$294m (US\$213m), or 60 cents a share, an increase of 32 per cent on the C\$223m, or 38 cents, a year earlier. Return on assets was up at 0.70 per cent, against 0.62 per cent and on equity rose to 16.5 per cent from 11.7 per cent.

Nine-month profit was C\$897m, or C\$2.06, an advance of 20 per cent from C\$742m, or C\$1.93. Return on assets was 0.70 per cent compared with 0.69 per cent and on equity 16.9 per cent against 13.4 per cent.

Non-performing loans dropped 24 per cent to C\$1.8bn at July 31 while the loan-loss provision for fiscal 1994 is C\$820m against C\$1.76bn in fiscal 1993.

The trust and investment-brokerage units improved. At July 31 assets totalled C\$172bn, up 2 per cent year-on-year.

Canadian Imperial Bank of Commerce said third-quarter net profit was C\$223m, or 97 cents, ahead 17 per cent from a year earlier. Return on assets was 0.58 per cent, against 0.55 per cent, and on equity 11.5 per cent, up from 10.5 per cent.

Nine-month earnings were C\$654m, or C\$2.59, an increase of 21 per cent from C\$539m, or C\$2.04.

Total revenues rose 11 per cent with strong business and consumer lending, while investments and brokerage activities were ahead. Net interest income was up 4 per cent and other income ahead 11 per cent.

Non-performing loans continued to decline, to C\$1.7bn at July 31, while fiscal 1994 loan provision was unchanged at C\$850m. Total assets reached C\$152.5bn, up 9 per cent year-on-year.

Boise Cascade, the US forest products group, is going ahead this month with an initial public offering of Rainy River Forest Products, a Canadian subsidiary holding all the newspaper assets.

Rainy River, with two mills in Canada and one in the US, will have annual sales of more than US\$350m and rank among North America's top 10 producers of newsprint and ground-wood papers.

Boise Cascade expects to raise C\$420m by selling units of Rainy River, comprising common shares and convertible debentures.

Boise Cascade will also raise US\$110m with an institutional issue of secured notes.

Loss deepens at Danish shipping group

By Hilary Barnes in Copenhagen

Lauritzen Holding, the Danish shipping and shipbuilding group, suffered a first-half net loss of DKr198m (\$32m), compared with a first-half loss last year of DKr73m.

The group takes in the J Lauritzen Shipping Group, DFDS, the North Sea freight and ferry group, and the Dan-yard shipyard.

Sales were up to DKr4.89bn from DKr4.33bn, but the result was hit by a rise in net financial costs to DKr230m from DKr142m and a DKr64m loss on the disposal of vessels.

The J Lauritzen Company made a loss of DKr289m, against a loss of DKr118m. The company's fleet of refrigerated cargo vessels was hurt by low freight rates and the weakness of the dollar against the krona.

The holding company said it has increased the shipping company's capital by issuing subordinated loan capital of DKr150m.

The shipyard also moved into a loss of DKr42m, compared with a profit of DKr66m.

The group has predicted a full-year loss of the same order as in 1993, when there was a net deficit of DKr170m.

FLS Industries, the industrial conglomerate which is a leading global supplier of cement mills and machinery, has reported an increase in first-half net profits to DKr176m from DKr128m in the same period of last year.

Sales advanced to DKr5.45bn from DKr5.6bn, which was mainly a reflection of the domestic building materials

group Aalborg Portland being classified as a subsidiary rather than as an associate company.

Codan, Denmark's biggest non-life insurance group, recorded a first-half net loss of DKr146m, against a profit in the same period last year of DKr50m.

Profits from insurance activities improved to DKr157m from a loss last year of DKr163m, but there were unrealised losses on securities of DKr303m this year against unrealised gains last year of DKr65m.

VA Technologie AG - Austria's largest engineering group - is active in Metallurgical Engineering, Energy and Environmental Engineering and Construction and Engineering Services, on a truly worldwide basis, with over 50% of turnover generated outside Austria.

The VA Technologie Group successfully floated 51% of its shares on the Vienna Stock Exchange last May.

All key figures of the Group for the first half of 1994 are higher than last year:

- Order intake rose by 10% with strongest growth in Construction and Engineering Services and Metallurgical Engineering
- 52% of order intake was in Energy and Environmental Engineering
- 25% of orders received came from the Far East
- Order backlog rose by 5% compared with the first half of 1993 (and by 10% over year-end 1993)
- Turnover increased by 40% over the comparable figure for 1993, mainly due to accounting practices applied to engineering companies
- Ordinary profit and net profit rose by 50% and 68% respectively over last year's first six months

As in previous years, the largest part of turnover will be achieved during the second half of 1994. This will also result in profits being higher in the second half of the year than in the first six months.

This factor, as well as the expected order intake, should result in a higher profit for 1994 than in 1993. This will enable a shareholder-friendly dividend policy for the current business year.

VA Technologie

Report on the first half-year ended June 30th, 1994.

KEY FIGURES	First half-year 1994	First half-year 1993	Change
ORDER INTAKE	17,155	15,530	+10%
ORDER BACKLOG	56,784	54,920	+5%
TURNOVER	18,194	12,950	+40%
PROFIT FROM ORDINARY ACTIVITIES	307	205	+50%
NET PROFIT	285	170	+68%
EMPLOYEES	12,467	12,930	-4%

For a copy of VA Technologie's 1994 half-year report or further information, please contact: Wolfgang Schwaiger, Investor Relations, VA Technologie AG, Lunzerstraße 64, A-4031 Linz, Austria.

VATECH
VA TECHNOLOGIE AG

INTERNATIONAL COMPANIES AND FINANCE

Sharp drop at Western Mining

By Nikki Tait in Melbourne

Western Mining Corporation, the Australian mining group, yesterday reported an equity-consolidated profit, after tax but before abnormal items, of A\$113.7m (US\$89m) in the year to end-June.

This compared with A\$165.5m in the previous year, a fall of 27.8 per cent.

WMC took a large abnormal charge in 1993-94, of A\$113.3m before tax, while the net charge in 1993-94 was A\$707,000. As a result, WMC's equity profit after tax and abnormal items was sharply improved, to A\$125m in the year just ended, compared with A\$88.3m previously.

This figure was in line with the profits forecast made by WMC in its rights issue prospectus last month.

The fall in Western's pre-abnormal profits derived largely from an 18.4 per cent drop in operating earnings, to A\$127.8m. Total revenue was 7.6 per cent higher at A\$1.7bn.

On a divisional basis, WMC's nickel operations remained in the red, although the loss was reduced to A\$23.2m from A\$29.4m.

The company noted that this improvement came despite a 14 per cent decline in US dollar terms for the overall price of nickel, and the production interruptions as the upgrading

of facilities took place.

The Olympic Dam business contributed A\$80.2m, against A\$47.4m, but the advance was largely due to WMC's increasing its ownership of the operations to 100 per cent.

Higher production, coupled with an improved gold price, meant that the Australian gold interests made A\$74.2m, up from A\$58.5m. However, the North and South American gold interests produced a loss of A\$16m.

The main depressant on profits was the petroleum division, which turned in profits of A\$4.7m, compared with A\$43.7m in the previous year. A lower oil price, declining production from a couple of fields, and an increase in unit costs due to higher amortisation/depletion charges did the damage.

WMC's share of after-tax profits from Alcoa of Australia, in which it has a 48.25 per cent stake, also fell, by 17.6 per cent to A\$147.3m. This was largely due to lower US dollar prices and lower aluminium sales volumes.

However, Mr Hugh Morgan, WMC's managing director, held out the prospect of a better year ahead.

The final dividend is 4 cents a share, down from 7 cents last time, making 8 cents for the year, against 10 cents last time.

Evolutionary, not revolutionary, approach at Elf

A tanker cannot turn on a sixpence, and it takes time to steer a new course at one of the world's leading oil groups.

That is the message from Mr Philippe Jaffré, chairman of Elf Aquitaine, France's largest industrial concern, after one year at the helm and seven months after having guided his charge through privatisation.

That is also the message from first-half results, which showed a decline of 10 per cent in net profits to FF1.2bn (\$222m). A boost from the company's chemicals activities in the second quarter meant the result was better than expected after a profits warning in June.

But Elf is still looking at another year of relatively meagre pickings, compared with the FF10.6bn at which net profits peaked in 1990.

Part of the explanation for the decline in profits lies in adverse conditions which have confronted all of the international oil majors - the fall in the oil price which continued into the first half of the year, pressure on refining margins and, for non-US groups, the weakness in the dollar.

But Elf also faces structural problems which have sapped its powers of resistance. "When you have any structural problem, it takes time and a lot of effort to remedy," says Mr Jaffré.

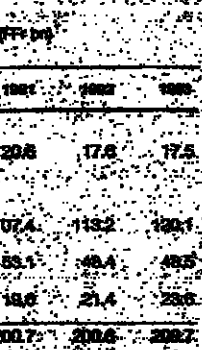
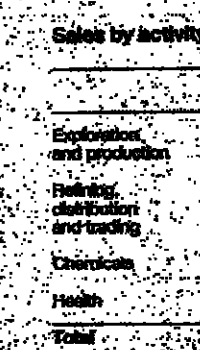
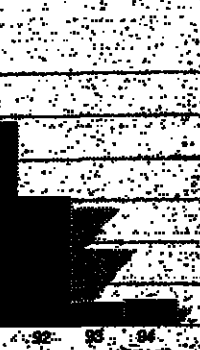
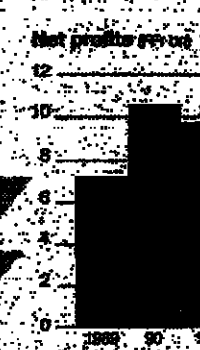
The problem is the legacy of an expensive and ambitious expansion strategy in the early 1980s, which included the acquisition of the North Sea assets of Occidental of the US and stakes in diverse companies such as Sidemann, the textiles group.

The strategy left Elf with a rising debt burden, which totalled FF8.3bn at the end of last year, increased financial

Elf-Aquitaine



Philippe Jaffré, chairman



charges and a declining return on capital, which fell from 13 per cent in 1989 to 4 per cent at the end of last year.

In an attempt to reverse the trend, Mr Jaffré is pursuing a strategy of debt reduction, tighter controls on investments and a focus on the group's three core business areas - oil, chemicals and healthcare.

But he is implementing his strategy through an evolutionary rather than a revolutionary approach, avoiding announcements of aggressive cost-cutting.

The approach has prompted impatience among investors. "I think that a lot of people who bought shares in Elf when it was privatised were buying for the upside potential of a big restructuring similar to what has happened at companies like BP," says one analyst at a US securities company.

"There is a feeling that Mr Jaffré is moving in the right direction but they haven't heard much to convince them of a big rationalisation effort."

Mr Jaffré is aware of such sentiments. "I know that Anglo-Saxon investors adore it

when big cost-cutting plans are announced," he says.

However, the Elf chief argues that such an approach is inefficient in the case of French industry and that the measures being implemented at Elf, without fanfare, are beginning to bear fruit.

On the first count, Mr Jaffré claims that the best way to prevent a restructuring plan in a French company is to

For Elf as a whole, he argues that significant returns have also been put in place over the past nine months, attacking the company's cost base and improving efficiency.

Investment spending this year is to be reduced by 20 per cent to FF2.0bn. The FF1.5bn spent in the first half shows the company is on course to reach this objective.

Elf's participation in the

quarter, and a further FF3.0m or so by the year-end. Against this could be offset about FF1.0m through an investment in Renault, a close partner of Elf, should the vehicle group be privatised.

The sale of assets will help ease Elf's debt burden, which Mr Jaffré says has stabilised and should start to decline from next year. But although he is a former head of Crédit

potential for a healthy rise in profits. Until then, the debt burden and the weakness in the dollar will offset, partly at least, the gains from a higher second-half oil price and stronger profits from chemicals and healthcare operations.

Measures are also being taken to increase the emphasis on profitability among the company's 90,000 employees.

Mr Jaffré denies that radical measures are needed to shake up the culture of the group. "Elf already has a taste for performance and development which is shown by the fact that it has gone from nowhere

50 years ago to rank among the world's 30 biggest companies today."

However, he says he is seeking to add a bit of "mustard" to staff attitudes through expanding employee share ownership and introducing stock options for senior executives, a scheme which is being discussed by Elf's board.

Such Anglo-Saxon measures, he feels, will sharpen Elf's competitive edge.

For British and US investors, however, it is a trace of mustard at the bottom line which is awaited.

Philippe Jaffré has run the oil group for a year, guiding it through the first stages of privatisation, reports John Ridding

announce it in advance. "If I was to declare a big cost-cutting plan then there would be resistance."

The Elf chairman argues that French industry has made significant progress in reducing costs and increasing efficiency in recent years without high-profile restructuring announcements.

He cites Renault, the automobile group, and Saint Gobain, the glass and building materials company, as well as Elf's own chemicals operations, which saw profits triple in the first half of the year.

Leuna refinery project in eastern Germany has been cut from a majority stake to 49 per cent, after a test of strength with the Troubadour privatisation agency.

The company has also embarked on an asset sale programme aimed at realising net receipts of FF5.0bn this year. Mr Jaffré says the target is within reach. Receipts in the first half amounted to FF1.5bn, including the sale of Elf's stake in Havas, the media and publishing group.

Another FF2.0bn should be realised by the end of this

Agriole, one of France's biggest banks, he denies he is taking a purely financial approach at his new charge.

"I didn't start by saying I must cut debts at the group, which would have been a bit reductionist. I started by saying that we must re-establish the profitability of the group and to do this we must concentrate on our core businesses. As a consequence we can sell assets and reduce debts."

Financial charges are expected to start falling from 1995, when most analysts see the

company which has been building up its food ingredients business aggressively in recent months, yesterday announced after-tax profits of A\$12m in the year to end-June, up from A\$11.0m last time.

Operating earnings, before interest and tax were 14 per cent higher at A\$219.8m, while sales were A\$2.75bn, compared with A\$2.65bn previously.

Earnings per share, on a fully-diluted basis, increased by 6 per cent to 27.6 cents.

Bank Bumiputra reports impressive profits leap

By Kieran Cooke in Singapore

Bank Bumiputra, Malaysia's second biggest bank which in the past has been dogged by financial scandal and mismanagement, seems to have put the bad days firmly behind it with a big leap in profits.

For the year to end-March, Bank Bumiputra recorded a pre-tax profit of M\$450m (US\$176m), compared with M\$351m in the previous year. Group income for the year rose almost 30 per cent to M\$500m.

Directors said that fee-based income and foreign exchange earnings made up about half the group's income, while the

recovery of bad loans contributed considerably towards the leap in profitability.

Bank Bumiputra is wholly owned by the Malaysian government. In the mid-1980s, it was involved in a loans scandal centred on the exposure of its Bumiputra Merchant Finance subsidiary in the Hong Kong property market.

Later, the bank faced bankruptcy over bad loans, this time in the Malaysian market. On both occasions Petronas, the Malaysian state oil company, had to come to the bank's rescue.

The Malaysian government intends to privatise the bank.

Profits at Amcor, the Australian paper and packaging group, rose to A\$336.9m (US\$250m) from A\$266.5m in the year to end-June, after tax but before abnormal charges.

The company said the advances reflected improved results across its operations, and came despite highly competitive markets.

However, bottomline results were marred by abnormal items, which included a charge of A\$80.3m, mainly covering restructuring costs flowing from the APFM acquisition last year, and goodwill write-offs.

In the previous year, Amcor enjoyed a A\$48m abnormal surplus, so profits after tax and abnormal items fell to A\$266.5m from A\$314.5m.

Sales for the year were up to A\$4.55bn from A\$4.52bn, and earnings per share before abnormal items and on a fully-diluted basis increased by 19.7 per cent, to 56.4 cents.

In the containers packaging division, sales were up by 12.3 per cent to A\$1.79bn, while operating profits rose to A\$203.9m, from A\$200.8m. Amcor said the result was good, given "the extensive rationalisation and other structural changes in the industry sectors in which containers operate".

Amcor Fibre Packaging saw sales rise to A\$1.78bn from A\$1.65bn, while operating profits were A\$141.5m, against A\$111.1m last time.

On the paper side, Amcor Paper

Group produced a 9.4 per cent operating profit gain, at A\$177.4m, with sales climbing by 28 per cent to A\$1.5bn.

Interest charges fell to A\$63.8m from A\$75.1m, and the group's capital and acquisition expenditure during the year topped A\$1.1bn, compared with A\$708m previously.

The dividend for the year is 34 cents, up from 31 cents, with a final 2 cents higher at 18 cents.

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Annual Investor Statement Dated as of August 12, 1994

CHRYSLER CREDIT CORPORATION

CARCO DEALERS' WHOLESALE TRUST 1990-A

Annual Investor Statement as of August 12, 1994, for the one year period commencing August 13, 1993 and ending August 12, 1994 (the "Annual Period") as provided by Chrysler Credit Corporation, as Servicer.

The following information is provided by Chrysler Credit Corporation, as servicer (the "Servicer") pursuant to Section 5.02 of the Pooling and Servicing Agreement dated as of August 1, 1990 among Chrysler Auto Receivables Company, as seller, the Servicer and The Fitch Bank and Trust Company, as trustee (the "Pooling and Servicing Agreement").

Total Principal Receivables balance on August 12, 1994 amounted to U.S. \$651,527,588.07. Such aggregate balance is allocated among the various ownership interests as follows:

Investor Amount	U.S. \$ 650,000,000.00
Special Accounts Balance	U.S. \$ 1,527,588.07
Secured Subordinated Amount	U.S. \$ 8,606,237.00
Senior Subordinated Amount	U.S. \$ 52,000,000.00
Excess Senior Amount	U.S. \$ 4,366,538.69

Rating credit enhancement currently totals and is comprised of the following:

Special Accounts Balance	U.S. \$ 1,527,588.07
Net Increase (Decrease) in Special Accounts Balance for the current Annual Period	U.S. \$ -
Percentage of Special Accounts Cap	100.00%

Base Subordinated Seller Amount	U.S. \$ 51,705,000.00
Net Increase (Decrease) in Base Subordinated Seller Amount for the current Annual Period	U.S. \$ -
Percentage of Special Accounts Cap	100.00%

Available Letter of Credit Amount	U.S. \$ 32,500,000.00
Net Increase (Decrease) in Available Letter of Credit Amount for the current Annual Period	U.S. \$ -
Percentage of Special Accounts Cap	100.00%

Yield Supplement Account Balance	U.S. \$ 6,500,000.00
Net Increase (Decrease) in Yield Supplement Account Balance for the current Annual Period	U.S. \$ 6,500,000.00
Percentage of Special Accounts Cap	100.00%

Available Pledged Receivables Required Monthly Coverage in 12 out of the 12 months of the current Annual Period	U.S. \$ -
Amount withdrawn from the Special Account	U.S. \$ -
Amount of Available Subordinated Funds drawn	U.S. \$ -
Amount added to the Yield Supplement Account	U.S. \$ 6,500,000.00

As of the date of this Annual Investor Statement no Arrears Event has been declared to have occurred.

Capitalized terms used but not defined herein have the meanings ascribed therein in the Pooling and Servicing Agreement.

By: Chrysler Credit Corporation as Servicer

U.S. \$180,000,000

United Microelectronics Corporation ("The Company")

(Incorporated with limited liability in Taiwan, Republic of China)

1.25 per cent. Bonds due 2004

(The "Bonds")

NOTICE IS HEREBY GIVEN to the holders of the outstanding Bonds that the Company has announced a bonus share issue of 171,559,420 shares with a record date of July 7, 1994, in accordance with the provisions of the Company's Articles of Incorporation and the Bonds. The Company's Board of Directors has determined that the Bonds are to be adjusted from NT\$94 per share to NT\$75 per share effective July 13, 1994.

United Microelectronics Corporation September 2, 1994

3i International B.V.

U.S. \$150,000,000

Guaranteed floating rate notes 1999

The notes will bear interest at 5.75% per annum for the interest period 1 September 1994 to 1 December 1994. Interest payable on 30 November 1994 will amount to \$143.36 per \$100,000 note and \$1,433.36 per \$1,000,000 note.

Agent: Morgan Guaranty Trust Company JPMorgan

CREDIT LOCAL DE FRANCE - CAEL S.A.

U.S. \$2,000,000,000

Euro-Medium Term Notes

SERIES NO. 12

FFC725,000,000 Inverse floating rate notes 1996

TRANCHE NO. 1

Notice is hereby given that for the interest period 1 September 1994 to 1 December 1994 the notes will bear interest at 24.69925% per annum. Interest payable on 1 December 1994 will amount to \$1,457.84 per \$100,000 note and \$14,578.40 per \$1,000,000 note.

Agent: Morgan Guaranty Trust Company JPMorgan

To the holders of

Mortgage Capital Trust I

Collateralized Mortgage Obligations, Series A

Class A-1 Bonds Due 1st June, 2017

Notice is hereby given that the interest rate on the Class A-1 Bonds for the interest period 1st September, 1994 through 1st December, 1994 is 5.6% per annum.

By: Bankers Trust Company, as Trustee.

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Mortgage Funding Corporation No. 2 Plc

S115,000,000 Class B-1

S11,000,000 Class B-2

Mortgage backed floating rate notes August 2003

For the interest period 31 August 1994 to 30 November 1994 the notes will bear interest at 5.8875% per annum. Interest payable on 30 November 1994 will amount to \$1,457.84 per \$100,000 note. The Class B-2 notes will bear interest at 6.0625% per annum. Interest payable on 30 November 1994 will amount to \$1,511.47 per \$100,000 note.

Agent: Morgan Guaranty Trust Company JPMorgan

MANUFACTURERS HANOVER TRUST COMPANY

U.S. \$100,000,000

Floating Rate Subordinated Notes Due 1994

In accordance with the provisions of the Notes, interest is hereby given that the rate of interest for the interest period from 21 August 1994 to 21 November 1994 has been fixed at 5% per annum. The Coupon Amounts will be \$200.00 per \$1,000.00 and \$2,000.00 per \$10,000.00 and will be payable on 21 November 1994 against surrender of Coupon No. 35.

At Agent Bank:

CARPS II Limited

Secured Amortising Floating Rate Notes due 1999

For the three month interest period August 31, 1994 to November 30, 1994, the rate has been determined at 5.7525%. The interest payable on the relevant interest payment dates, November 30, 1994 will be \$306.18 per \$500.00 and \$3,061.80 per \$1,000.00 principal amount of Notes.

By: The Chase Manhattan Bank, N.A. London, Agent Bank.

AKRAN & BORGARFORD HEATING CORPORATION

U.S. \$100,000,000

Floating Rate Notes due 1995

In accordance with the Terms and Conditions of the Notes, interest is hereby given that the rate of interest for the interest period from August 31, 1994 to February 28, 1995 the Notes will carry an interest rate of 5.5075% per annum.

The Coupon Amount payable on the interest payment date, February 28, 1995 will be U.S. \$27.54 per U.S. \$1,000.00 principal amount of Notes.

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S33,000,000

Subordinated floating rate notes due 2001

Notice is hereby given that the notes will bear interest at 7.1625% per annum from 31 August 1994 to 28 February 1995. Interest payable on 28 February 1995 will amount to \$3,551.82 per \$100,000 note.

Agent: Morgan Guaranty Trust Company JPMorgan

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INTERNATIONAL CAPITAL MARKETS

Further downward pressure put on bunds

By Antonia Sharpe in London and Frank McGurty in New York

Although the Bundesbank's decision not to change official interest rates was widely expected, the news put further downward pressure on German government bonds, which had already received an early knock from stronger than expected west German industrial production figures.

The data showed a 2.2 per cent monthly rise in July, compared with market forecasts of between 0.5 per cent and 1.5 per cent and was seen as a further confirmation that the economy was growing rapidly and the Bundesbank would have even fewer reasons to cut official interest rates further.

GOVERNMENT BONDS

Mr Kit Juckes, of S.G. Warburg, said the shape of the German yield curve suggested that the market was still fairly relaxed about the monetary outlook. "Bunds are completely priced given the likelihood that German rates will start to rise next year," he said. On Life, the September bund future fell 0.45 points to 91.27 in modest trading.

UK gilts outperformed their continental European counterparts thanks to a late rally which dealers had difficulty in explaining. Sterling's resilience in the face of a falling dollar and a newspaper report that 10-year gilt yields could fall to 7.4 per cent were given as possible reasons.

The rise in gilts caused a further narrowing of the yield spread between gilts and bunds to 182 basis points, which forced more dealers to close their short positions. "The bears are being squeezed out of the market," said one analyst. On Life, the December long gilt future was higher at 101.74 in the late afternoon, below the day's best of 102.4.

Elsewhere, Italian government bonds fell in nervous trading as a result of renewed inflating in the government. Italian futures fell by nearly a point. By contrast, French government bonds were steady following an uneventful monthly auction of OATs.

Canadian bonds top performers in August

By Graham Bowley

The Canadian government bond market outperformed the rest of the world's bond markets in August. J.P. Morgan's government bond index shows Canadian bonds posted a return of 2.78 per cent, measured in local currency, followed by Australia with a gain of 1.51 per cent and the UK with 0.79 per cent.

Commodities fund launch delayed

By Antonia Sharpe

Unexpectedly strong interest from Japanese investors in a commodities fund which is about to be launched by BZW (BZWIM) has prompted a delay in the publication of the pathfinder prospectus to allow time for it to get clearance from Japan's Ministry of Finance.

To tap Japanese demand, BZWIM needs to register the closed-end fund as a private placement with the MoF. The process includes translating the document into Japanese and answering MoF queries. Mr Ronald Gould, the BZWIM managing director in charge of setting up the Jersey-based investment company, said the prospectus, due to be published next Monday, would now be released a week later.

Ten-year issues in Canadian dollars

By Graham Bowley

The Canadian dollar market saw two 10-year eurobond offerings yesterday as borrowers took advantage of the recent revival in the underlying Canadian government bond market.

INTERNATIONAL BONDS

BNG launched a C\$250m issue, priced to yield 22 basis points over the 6 per cent Canadian government bond due 1994. Lead managers ABN Amro reported demand from retail investors in Belgium and Luxembourg but about 60 per cent of the bonds are expected to be taken up by European institutional investors.

The long end, and investors in particular like the spread against the US market, syndicate managers said. The C\$250m issue, priced to yield 16 basis points above the 6 per cent Canadian government bond due 2004.

The eurobond market also saw a flock of other issues yesterday, mainly small, short-dated deals aimed at retail investors, including five US dollar offerings. "This signifies that the dollar market will be the market of choice in the fourth quarter rather than more peripheral markets as borrowers go for safety," said one syndicate manager.

NEW INTERNATIONAL BOND ISSUES									
Borrower	Amount	Coupon	Price	Maturity	Face	Spread	Book runner		
US Dollar									
Ford Credit Europe	200	6.575	99.858R	Oct 1997	0.25R	+37H/4H-67	Goldman Sachs International		
Kong Thai Bank	150	(R)	100.00	Sep 2004	0.45		Goldman Sachs Singapore		
Yuko Group Finance Europe	150	7.575	98.47R	Sep 1999	0.375R	+60H/4H-99	Merrill Lynch International		
Banque Paribas	150	(R)	100.00	Oct 1996	0.01R		Swiss Bank Corp		
Bank of America	90	(R)	100.00	Jul 1999	undtd.		Chase Investment Bank		
YEN									
Province of Ontario	100m	4.25	100.00	Sep 1999	undtd.		CS First Boston		
World Bank Finance Canada	100m	4.25	100.00	Sep 1999	undtd.		CS First Boston		
D-MARKS									
Deutsche Ausgleichsbank	300	(R)	100.02	Sep 2001	0.20		DG Bank		
Deutsche Bank	400	(R)	99.59	Sep 2001	0.30		DG Bank		
CANADIAN DOLLARS									
BNG	250	9.125	98.84R	Oct 2004	0.325R	+22H/4H-04	ABN Amro Bank		
Region Ile-de-France	85	6.00	99.31R	Sep 2004	0.335R	+16H/4H-04	Paribas Capital Markets		
ITALIAN LIRE									
PSK	180m	11.00	101.125	Oct 1996	1.125		Swiss Bank Corp.		
GUILDERS									
Bayrische Landesbank	250	6.375	99.70R	Oct 1997	0.1675R	+16H/4H-97	ABN Amro Bank		
AUSTRALIAN DOLLARS									
Bayrische Landesbank	100	8.00	101.43	Oct 1996	1.75		ABN Amro Bank		

Final terms and non-callable unless stated. The yield spread (over relevant government bond) at launch is supplied by the lead manager. *Unlisted. Floating rate notes. R: fixed re-offer price; fixed are shown at the re-offer level. a) Short 1st coupon. b) Callable on coupon dates from Sep 89 at par. c) 6-month Libor +85bp for 1st 5yrs and +225bp thereafter. d) Long last coupon. e) 3-month Libor +50bp. f) Issues launched 9/7/94 was increased to \$250m. Plus 45 days accrued. g) 6-month Libor +250bp. h) 6-month Libor. i) 6-month Libor +35bp.

the deal was a success and lead manager Goldman Sachs said the bonds were mainly sold to Swiss retail investors. Volvo Group Finance Europe also tapped the dollar market, with a \$150m five-year issue

priced to yield 56 basis points over the 6 per cent Treasury 1998.

Syndicate managers said the pricing was ambitious for an unrated borrower and that the bonds were pitched at a less

Greece names OTE banks

By Antonia Sharpe

The Greek government has appointed 10 foreign banks to act as global syndicate members on the international tranche of its planned privatization of OTE, the Greek telecoms monopoly.

They are: ABN Amro, Banque Paribas, Bear Stearns, BZW, Deutsche Bank, James Capel, Lehman Brothers, Salomon Brothers, S.G. Warburg and Yamaichi. The syndicate will be managed by CS First Boston and Schroders, which were appointed joint global co-ordinators of the issue in May, along with National Bank of Greece.

WORLD BOND PRICES

BENCHMARK GOVERNMENT BONDS

Coupon	Yield	Price	Days' change	Yield	Week	Month
Australia	8.000	99.04	97.2000	-0.180	8.37	8.24
Belgium	7.250	94.04	92.2000	-0.180	8.45	7.97
Canada*	8.000	99.04	97.2000	-0.180	8.37	8.24
Denmark	7.500	120.4	102.0700	-0.100	8.80	8.10
France	6.500	99.04	97.2000	-0.180	8.37	8.24
Germany	6.500	99.04	97.2000	-0.180	8.37	8.24
Italy	6.500	99.04	97.2000	-0.180	8.37	8.24
Japan	4.000	99.04	97.2000	-0.180	8.37	8.24
Netherlands	5.750	99.04	97.2000	-0.180	8.37	8.24
Spain	6.500	99.04	97.2000	-0.180	8.37	8.24
UK	6.500	99.04	97.2000	-0.180	8.37	8.24
US Treasury*	7.500	114.24	100.08	-0.302	7.48	7.39
EU (French Gov)	6.000	94.04	92.2000	-0.180	8.41	7.79

US INTEREST RATES

Instrument	Rate	Yield
1 month	7.4	7.4
3 month	7.4	7.4
6 month	7.4	7.4
1 year	7.4	7.4
2 year	7.4	7.4
3 year	7.4	7.4
5 year	7.4	7.4
10 year	7.4	7.4
30 year	7.4	7.4

BOND FUTURES AND OPTIONS

Instrument	Open	Settle	Change	High	Low	Est. vol.	Open int.
Sep	113.42	113.38	-0.12	113.56	112.92	206,848	91,482
Dec	112.52	112.48	-0.12	112.60	112.08	13,078	48,554
Mar	111.86	111.82	-0.12	111.98	111.20	55	4,085

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Sep	113.42	113.38	-0.12	113.56	112.92	206,848	91,482
Dec	112.52	112.48	-0.12	112.60	112.08	13,078	48,554
Mar	111.86	111.82	-0.12	111.98	111.20	55	4,085

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Mar	111.86	111.82	-0.12	111.98	111.20	55	4,085

ITALY

NOTIONAL ITALIAN GOVT. BOND (5TP) FUTURES							
(JIFFE) Lira 200m 100ths of 100%							
	Open	Sett price	Change	High	Low	Est. vol	Open int.
Sep	100.30	98.87	-0.73	100.30	98.35	50061	38987
Dec	98.50	97.90	-0.67	98.45	97.80	13333	41030
Mar		96.50	-0.75			0	1100

COMPANY NEWS: UK AND IRELAND

Cost cutting and restructuring behind 29% advance despite sales fall

Trimmer Rolls-Royce at £40m

By Paul Betts, Aerospace Correspondent

Rolls-Royce, the aero engine and industrial power group, yesterday reported a 29 per cent rise in pre-tax profits for the first half of 1994 despite a 14 per cent decline in sales.

The higher profits of £40m (£31m) reflected the company's cost cutting and restructuring programme, which offset continuing difficulties in the aerospace and industrial power markets. Sales fell from £1.75bn to £1.5bn.

Sir Ralph Robins, chairman, said he did not expect any improvement in market conditions until 1996.

The company's restructuring programme, however, involving the closure of six plants and the shedding of 6,500 jobs by next spring was running ahead of plan, placing the group "in a good competitive position to take advantage of the orders which are expected over the longer term".

"Conditions remain extremely challenging in all our markets, but our greater

productivity coupled with the completion of the major part of our Trent civil engine development programme will enable us steadily to improve performance," Sir Ralph said. Trent engines will power the new Boeing and Airbus wide body aircraft.

Sales in the group's aerospace activities fell from £1.06bn to £924m, with profits before interest of £24m (£25m). However, the company expected civil engine deliveries for the year to be similar to the 1993 level. As expected, military engine deliveries were lower.

Sales in the industrial power operations fell to £576m (£574m), while profits before interest rose to £27m (£26m). The company's cost cutting drive has led to an improvement in operating margins to 9.9 per cent (8.9 per cent).

The current order book totalled £5.9bn, excluding a further £1bn of announced orders not yet subject to formal contracts, the company said.

The balance sheet remains strong with net cash of £309m

at the end of June. Excluding last year's rights issue, net cash has improved by £134m over the last 12 months.

The interim dividend is held at 2p, payable from earnings per share ahead to 2.53p (2.21p restated).

● **COMMENT**

Although Rolls-Royce shares closed 8p down yesterday at 180p, the interim figures were in line with most City estimates. The company is still having to ride the bottom of the aerospace cycle which is unlikely to turn before 1996. However, extensive restructuring and productivity improvements should put it in a strong position to take advantage when the upturn eventually occurs - after a recession in the industry which started in 1990. The company has also continued to invest in expanding its aero-engine product range, which has placed it in a much stronger competitive position against its US rivals than in earlier industry cycles. But there are unlikely to be any short-term miracles and



Sir Ralph Robins: challenging market conditions remain

the company is likely to face another 12 to 18 months of hard slog before it finally sees some tangible improvement in its main markets. A full-year forecast of £100m pre-tax, against £76m last year, leaves the shares on a forward multiple of nearly 20 even after an 18p fall in two days.

Body Shop exposé fails to shock

By Andrew Jack and Neil Buckley

The long-awaited article that has helped trigger controversy over the image of Body Shop International, the cosmetics and toiletries group, was published yesterday to the bemusement of investors and ethical researchers.

"Shattered Image", an article in US-based Business Ethics magazine written by Mr Jon Entine, highlighted a series of alleged inconsistencies between Body Shop's marketing of its espoused ideals and its practices.

Some commentators expressed doubts about the potency of its revelations, while Body Shop flatly rejected its contents.

Mr Entine said there had been a "wide gap" between promises and delivery to Body Shop's franchisees. He accused the company of having used off-the-shelf product formulas filled with non-renewable petrochemicals.

He suggested there had been quality control problems, that only a tiny amount of its ingredients came through its "trade not aid" programme and that its charitable contributions fell short of company statements.

He reported claims that Body Shop invented stories about the exotic origins of some of its products. He said it had a history of legal threats against journalists seeking to publish details behind the "gloss".

Body Shop yesterday called the article "recycled rubbish" and hinted at possible legal action by saying it was reviewing its position and would defend its reputation. "It is a mish-mash of defamatory and actionable falsehoods. It contains distortions, shoddy reporting and views of several unqualified or biased sources or so-called experts."

Business Ethics decided not to publish or circulate its edition in the UK following threatened legal action by Body Shop, but a number of analysts have obtained details.

Mr Peter Webster, executive secretary of the Ethical Investment Research Service, said: "It doesn't seem to add up to its claims. It doesn't sound like the end of an institution."

He said it did not contain many of the positive aspects of the company's activities, but said his organisation was planning to complete a full report by next week on Body Shop.

Mr Rod Whitehead, analyst at Goldman Sachs, said: "I felt that if [the article] came up with some fairly serious allegations, and these were given a fair amount of publicity in the popular press, that could affect sales quite badly. But my impression is that they have not come up with anything new and serious allegations."

Vickers ahead but shares fall on recovery warning

By Andrew Bolger

Shares in Vickers fell 7p to 188p yesterday after the engineering group, which makes tanks and Rolls-Royce cars, said it was seeing only a patchy recovery.

Pre-tax profits nearly doubled, from £8.3m to £15.9m, but were still slightly below market expectations. Sales were flat at £300m (£281m).

Sir Richard Lloyd, chairman, said the recovery in results which started last year had continued, but this was more to do with plant rationalisation and efficiency measures than improvements in markets.

Sales of Rolls-Royce cars rose slightly, from 685 to 701, and higher sales in the UK and east Asia (excluding Japan) offset poor sales in North America.

Sir Colin Chandler, chief executive, said he hoped by the end of the year to reveal the outcome of talks the group has been having with other manufacturers over collaboration on new model programmes.

Vickers will not say who it has been talking to, but is

known to have been discussing the purchase of V12 engines and other components from Mercedes-Benz of Germany.

Cosworth, the high-performance engine subsidiary, is still suffering from declining demand for special Ford Escorts and Scorpios, but is investing in a new factory for its castings business and an engine centre.

The group's defence systems business now has a total order book of £1.5bn, following the government's recent confirmation of the follow-on order for 250 Challenger 2 tanks, in addition to the 127 tanks ordered in 1991. Sir Colin said the strength of this order book made the defence business a much stronger and more attractive partner when considering collaborative projects.

The medical division's contribution fell, partly because of continued uncertainty over the proposed Clinton healthcare reforms and tough trading conditions for distributors in continental Europe.

The propulsion technology division continued to suffer

from the depressed state of the aerospace business, but on the marine side the Swedish-based KalmeWa company had an "outstanding" six months.

Earnings per share improved to 3.8p (3.5p).

The interim dividend rose to 1.75p (1.25p).

● **COMMENT**

The trading statement was deliberately downbeat, to lower expectations about the speed of likely recovery. But Vickers still looks in a strong position, following last year's £50m rights issue and the recent award of the crucial Challenger order. Capital investment is being increased - particularly at Cosworth - and there is some scope for margin improvement at the tank factories. On a prospective multiple of 19, the shares cannot be called cheap, but a modest upturn in demand for cars will sharply improve the bottom line. The shares are unlikely to move decisively until the group reveals its decision over collaboration on the next generation of luxury cars.

SE considers short selling regulation

By Simon Davies

The Stock Exchange is to consult stock market participants on the potential regulation of short-selling, in the wake of complaints over the impact of speculative short sellers on recent share offers.

The Exchange said it would issue a consultative document during September to tap views "on proposals for dealing with concerns" over short selling.

Short sellers drive down the share price of companies which are arranging sub-

stantial share issues by selling shares that they do not own. Speculators can then balance their "short" positions by buying cheaper shares through the secondary market issue.

SG Warburg, brokers to the Treasury for last year's BT3 share issue, tried to persuade the Stock Exchange to implement rules to prevent substantial investors from driving down the British Telecom share price prior to the offer. The request was turned down under pressure from a number of large institutions.

However, Mr Andrew Large, chairman of the Securities and Investments Board, gave a speech last July urging the Exchange to introduce rules governing short selling prior to secondary market issues.

The Exchange cited "concerns expressed at the time of the British Telecom and Wellcome share issues", both more than 14 months ago, as the driving force behind its latest decision.

A response to the consultation process is likely by the end of this year.

Michael Page ahead sharply to £4.35m

By Peter Pearce

Shares in Michael Page Group rose 24½p to 114p as the international recruitment and executive selection consultant announced pre-tax profits more than doubled from £1.57m to £4.35m for the first half of 1994.

Mr Terry Benson, chief executive, said "favourable trading conditions had helped all the UK businesses exceed expectations". This was in contrast to the "mixed progress" on the Continent.

Group turnover expanded from £24.4m to £34.2m. The previous year's figure, however, included £1.16m from LBW France, which has since been sold. Operating profits were £4.18m, against £1.49 - including losses of £109,000 from LBW France.

Within the UK, turnover was divided as to 70 per cent permanent recruitment and 30 per cent temporary. Revenue in the permanent side rose more than 51 per cent and the temporary side "higher than that".

Michael Page Marketing and

Sales expanded further and, as a result, Sales Recruitment Specialists was set up to provide sales representatives at the lower end of the pay spectrum. Mr Benson said the consultancy side expected to open two more offices by December, bringing the total to 10.

In mainland Europe, profits at the French operations enjoyed a substantial increase, "being well past the worst" as the economy recovers. Mr Benson was more cautious about Germany and the Netherlands, where trading conditions continued to be difficult. The outlook, however, seemed brighter, and another German office is to be opened in Frankfurt.

The group is also planning to open an office in Hong Kong. In spite of the start-up costs, Mr Benson is expecting long-term rewards from the Asian market.

The interim dividend is raised to 0.8p (0.6p), payable from earnings sharply up at 4.45p (1.65p) per share.

Motor side helps Barr & WAT advance 40%

By Peter Pearce

Pre-tax profits at Barr & Wallace Arnold Trust, the motor distribution and leisure and holiday group, advanced 40 per cent from £263,000 to £378,000 in the half-year to June.

The rise was achieved in spite of greater losses in leisure and holidays and on the back of a 39 per cent increase at the operating level in the motor distribution side. Here profits emerged at £1.98m (£1.42m) on divisional turnover up to £32.2m (£28.2m).

Mr John Parker, chief executive since May when Mr Malcolm Barr, chairman, ceded half the dual role, said new car sales, were ahead of the market.

The group took steps to develop its used cars sales operations, which, including the concomitant financing and MOT sides, outperformed the new car side.

As part of plans for "controlled expansion", the group bought in August a Mercedes dealership in Bristol for

£3.68m, bringing the total to eight dealerships.

Mr Parker said he was brought in to "look at changing the culture of the company", though he stressed that Mr Barr was the only family member on the board and that the family was being proactive in the process. The group has 2.45m ordinary shares and almost 10m A non-voting.

The leisure and holidays side incurred losses of £820,000 (£588,000) on turnover of £31m (£30.2m).

Group turnover rose 15 per cent to £24m (£20.8m). Earnings were 4.8p (3.5p) and the interim dividend is held at 3p.

Compass

Mr Francis Mackay, chief executive of Compass, yesterday added the title of deputy chairman of the acquisitive contract catering group. In March, Compass appointed Mr John Thomson as its non-executive chairman following the retirement of Mr Ingram, senior on grounds of ill-health.

Rathbone improves 22%

Rathbone, the quoted private banking and asset management group, increased pre-tax profits 22 per cent to £2.07m, against £1.68m, for the first six months of the year.

Turnover rose from £2.27m to £3.19m, while earnings per share gained 17 per cent to 10.55p (9.09p).

The interim dividend is raised to 3p (2p).

Rank Leisure gets the Zoo & the Cage

Allied Leisure, the nightclub and ten-pin bowling group, has sold two nightclubs, The Zoo & the Cage in Bournemouth and The Venue in Poole and the Colonnades bar in Poole to Rank Leisure for a total of £4.6m.

The premises contributed profits of £590,000 before interest and tax for the 11 months ended June 19.

US giant takes small house

By Peter Pearce

American giant gobbles up English miniature and, contrary to mythic expectation, everyone says they are all going to live happily together ever after.

This was the tale being told yesterday as Stanhome, a US marketer and distributor of consumer products, giftware and collectibles, added another collectible line to its collection.

It made a recommended cash offer of 180p a share for Lilliput, the Cumbria-based maker of hand-painted miniature china cottages, casting a ray of sunshine on a niche in the small housing market.

The bid values Lilliput, which floated less than a year ago in October, at £37.2m. At the flotation price of 135p it was valued at £31.4m.

Yesterday morning the shares opened at 52p.

As a result Mr John Russell, Lilliput chairman and chief executive, said that he would have done the deal no differently in an ideal world.

He felt he had fulfilled his obligations to shareholders and, because Lilliput will stand alone within Stanhome, to the

future of the company and its staff.

Mr Russell, who had 600,000 shares, is to make £1m gross, while Mr DG Tate, the group's founder who had some 3.8m shares, will gain about \$8m. Both men made substantial amounts at the time of the float.

At the time of the morning's announcement, Stanhome had received acceptances in respect of 10.3m shares, or 44.4 per cent, from directors, their wives, North of England Ventures and Lazard Ventures.

By 4.30pm Stanhome spoke for 57.9 per cent, having bought a further 13.5 per cent at 155p.

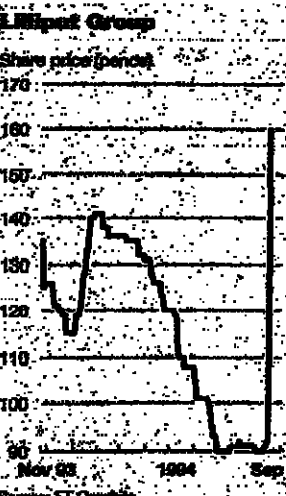
Stanhome has three divisions: Lilliput will fall within Enesco Worldwide Giftware, which in 1993 contributed 49 per cent of the \$751m (\$485m) group sales. Enesco designs and markets giftware, licensed lines and collectibles and sells them through some 50,000 retail outlets mostly in the US.

Mr Bill Sawright, Stanhome chief executive, said most of its collectibles, in particular its Precious Moments line, were made in China. Lilliput's products are made in the UK, an

important factor for the east Asian market.

There would be synergies in US distribution - cottages are "hot" in the US, according to Mr Sawright - and Stanhome wanted a "sweet, shy" company as a foothold in Europe, a market it wanted to expand into.

He said that collectibles was a growing market, especially in the US and particularly for women.



Source: FT-Comptel

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Source: FT-Comptel

Source: FT-Comptel

Source: FT-Comptel

Source: FT-Comptel

United Carriers falls to £1.2m at midway

By Caroline Southey

Four trading conditions pushed down interim pre-tax profits at United Carriers, the parcel and freight company which was floated in February.

In the half year to July 2 pre-tax profits fell from £1.6m to £1.2m on turnover up from £52.7m to £58m.

Operating profits, which included a £364,000 loss on discontinued operations last time, were down from £1.98m to £1.53m.

Earnings per share fell from 5.8p to 5p, adjusted to reflect the scrip issue in February.

Mr Allan Binks, chairman, said that as foreshadowed in the profits warning in May, the company's UK parcels and freight network suffered a sharp drop in volumes.

The division had secured new customers, he said, but any benefits from the additional business would not be felt until next year.

Although volumes had improved in May, Mr Binks said there was "no reason to change earlier expectations that volumes would remain flat during the second half of the year".

Operating profits in the specialist transport and distribution division were also lower, although there were signs of a steady improvement in the UK and Continental car markets.

Margins in this division would be improved in the second half by the acquisition of 100 large trailers which would reduce spot hiring, Mr Binks said.

The company has net assets of £29.1m (£24.7m) and gearing of 17 per cent.

United Carriers shares closed unchanged at 160p yesterday. On the day of the profits warning in May, the shares fell by 39p to 155p. The flotation price was 155p, which produced a market capitalisation of £51.8m.

DIVIDENDS ANNOUNCED

	Current payment	Date of payment	Corresponding dividend	Total dividend	Total dividend
Barr & Wallace	3p	Oct 28	3p	-	11
British-Borneo	2.667	Oct 27	2.667	-	7.1
Cattle & Ovens	2.15	Nov 16	1.3	-	5
English & Ovens	0.3	Oct 27	2.27	-	0.5
Independent News	3p	Nov 1	2.27	-	7.23
Ladbrokes	2.4	Dec 1	4.82	-	8
Lilliput	1.65	Oct 14	-	-	0.6
Lux Print Tech	0.75	Nov 29	1.73	1	2.08
Page (Richard)	1.75	Nov 11	0.6	-	2.1
Quattro 5	2	Nov 21	2	-	8
Rathbone Bros	3	Oct 10	2	-	7.5
Reckitt & Coleman	6.95	Jan 6	6.45	-	17.55
Rolls-Royce	2	Jan 9	2	-	5
Silvermines	0.25p	Oct 8	0.8	-	0.5
TAN	7.5	Nov 4	10.85	-	10.85
United Carriers	1.6	Oct 21	-	-	5
Ordinary	1.75	Oct 19	1.25	-	3
Williams Hodge	6.25p	Oct 10	5	-	12.75

Dividends shown pence per share net except where otherwise stated. 10n increased capital. *Consolidated after allowing for scrip issue. \$USM stock. \$first pence. \$Final of not less than 3.5p indicated.

MONTHLY AVERAGES OF STOCK INDICES

	August	July	June	May
FT-SE Actuaries Indices				
100 Index	3178.5	3036.5	2980.3	3088.2
Mid 250	3736.5	3537.1	3508.8	3705.7
350 Share	1004.5	1029.5	1005.0	1068.8
Non-Financial	1728.7	1642.25	1618.42	1693.44
Financial Group	2197.58	2129.02	2111.15	2164.18
All-Share	1591.47	1517.70	1487.44	1558.27
Eurotrack 100	1379.19	1347.22	1363.71	1447.64
Eurotrack 200	1430.90	1385.41	1380.09	1482.03
FT-A World Index	178.75	183.94	173.49	172.44
FT Indices				
Government Securities	91.86	92.67	92.08	94.26
Fixed Interest	2485.9	2405.4	2397.7	2455.0
Ordinary	1983.17	1931.35	1944.97	1981.55
Gold Mines	29.402	23.977	23.618	25.485
SEAO Bargains (\$0.00m)				
FT-SE 100	3255.1 (284)		3097.4 (14)	
FT-SE Mid 250	3816.6 (314)		3641.4 (14)	
FT-SE 350	1046.1 (284)		1026.6 (14)	
FT-A All Share	1630.33 (220)		1551.22 (14)	
Ordinary	2552.0 (251)		2405.9 (14)	

This announcement appears as a matter of record only

August 1994

Wates
=leisure

£20m Expansion Capital Package

for

WATES LEISURE LIMITED

Negotiated, Led and Arranged by
Phoenix Fund Managers Limited

Institutional Equity Underwritten by
The Phoenix Development Capital Fund

Senior Debt Provided by
Bank of Scotland

Legal Advisers
Herbert Smith (Phoenix Fund Managers Limited)
Lovell White Durrant (Bank of Scotland)
Norton Rose (the company and its existing shareholders)

Reporting Accountants
Coopers & Lybrand

Financial Advisers to the Company
Cazenove & Co.

Auditors to the Company
Slater, Chapman & Cooke

Phoenix Fund Managers Limited
A member of IMRO

Williams
upbeat

Williams shares aided by upbeat statement

By Peggy Hollinger

Williams Holdings' shares yesterday recovered from their recent weakness and jumped 3 per cent to 549p as the fire protection, security and building products group offered the market an upbeat assessment on trading.

Mr Nigel Rudd, chairman, said Europe was showing better-than-expected growth, while "economic indicators for the second half in the UK and North America continue to be favourable".

However, he warned that the pace and duration of any economic recovery remained uncertain.

The market welcomed Mr Rudd's statements as encouraging, but still more cautious than those being made by other industrial conglomerates. "They are at pains to make sure people do not get carried away," said one analyst.

Mr Rudd's comments came as the group announced a 13 per cent increase in pre-tax profits to £26.2m for the six months to June 30. The outcome, after reorganisation costs of £4m, were largely in line with expectations. Sales were 10 per cent ahead to £948.7m.

Mr Rudd emphasised the group's organic growth, progress on margins, and improving cashflow. Profits from continuing businesses rose by 15 per cent to £26.7m, on sales 13 per cent ahead to £938m.

Cashflow - for which Williams has often been criticised - was held at similar levels to last year, before dividends, disposals and acquisitions. Given the 40 per cent increase in capital expenditure and higher tax, the underlying cashflow position was better, Mr Rudd said, and was expected to improve further in the second half.

Williams has bought three businesses since the year-end for £110m. Provisions for restructuring the largest acquisition, Solvay, would come to just over £2m, leaving Williams with total charges this year estimated at more than £5m.

Mr Rudd said the group hoped to use the proceeds of the £267m rights issue in May to complete further purchases - particularly in fire protection and building products - before the end of the year.

Profits at the security division advanced 31 per cent to £16.5m, thanks to the Corbin Reservoir acquisition. Fire protection increased profits by 21 per cent to £25.7m. North American building products returned a 17 per cent profit advance to £19.6m, while the European business increased profits by 10 per cent to £24.9m.

The interim dividend is increased to 5.25p (5p), payable from basic earnings per share up 8 per cent to 9p. Excluding exceptional items, earnings rose by 12 per cent to 8.6p.



Nigel Rudd: pace of economic recovery remains uncertain

COMMENT

The shares jumped today, less on the back of Mr Rudd's guarded optimism than on the relief that Williams appears to be holding its margins in spite of higher raw material prices. There is also the feeling that Williams may have finally laid to rest cash flow doubts. Forecasts are for £200m in profits this year, with the shares on a prospective p/e of about 18. Although Williams offers solid long-term potential, the shares appear to be fairly priced right now.

Independent Newspapers advances to £15.2m

By John McManus in Dublin

Independent Newspapers, the Irish newspaper group controlled by Mr Tony O'Reilly, reported a rise in pre-tax profits from £14.6m to £15.2m (£14.1m) for the half year to June 30.

The increase reflected better margins in Irish publishing operations, improved trading conditions overseas and first-time contributions from acquisitions in the UK and South Africa.

Independent's Irish operations accounted for £94.5m (£83.5m) of turnover of £296.5m (£281.5m), and contributed £10.6m (£9.4m) to operating profits of £15.2m (£14.1m). Margins were enhanced by rationalisation and increased advertising revenue, according to Mr Liam Healy, chief executive.

Independent has a 29.9 per cent stake in Newspaper Publishing, owner of the UK titles, The Independent and The Independent on Sunday. Bought for £23.3m last February, the stake is treated as an investment and was the main cause of a rise in net interest costs from £275,000 to £297,000.

Earnings per share were 9.25p (£1.83p) and the interim dividend goes up from an adjusted 2.57p to 3p.

COMMENT

The strong performance of Independent's core Irish publishing operation makes it a good play on the recovery prospects of the Irish economy. With improving advertising revenues feeding through, full-year profit forecasts of about £23m seem a little on the low side. Recent circulation figures show that Independent's title dominates the Irish daily, evening and Sunday markets. In the second half the group will make almost half its operating profit outside Ireland, marking its transition into an international media group. The prospective p/e is nearly 18 based on yesterday's closing price of 305p. With the growth prospects, especially in South Africa, the shares still look reasonable value.

Engineering group confirms interest in German vehicle parts maker Strong demand lifts T&N to £61m

By Tim Burt

T&N, the engineering and motor components group, yesterday confirmed it was considering a bid for Kolbenschmidt, the German vehicle parts manufacturer. Mr Colin Hope, chairman and chief executive, said T&N had held talks with Metallgesellschaft, which holds 47 per cent of Kolbenschmidt, but failed to agree a price.

Announcing a sharp increase in first-half profits, Mr Hope said that a deal could be hampered by possible cartel problems in Germany, where the enlarged group would control up to 40 per cent of the piston products market.

Buoyant demand helped lift pre-tax profits from £39.4m to

£61m, on turnover ahead 27 per cent at £985m (£774m) in the six months to June 30.

Although operating profits rose to £76.3m (£54.2m), the improvement was dented by increased asbestos-related costs of £13.9m (£9.8m) as the group topped up its liability provisions against future legal costs and compensation claims.

Asbestos pay-outs and the second instalment on its £100m acquisition of Goetze, the German piston ring producer, contributed to negative operating cash flow of £8.9m, compared with a £33.3m surplus.

In a bid to strengthen its balance sheet and reduce borrowings, the group announced an enhanced scrip alternative to its interim dividend of 7.5p

(10.85p). If all shareholders opted for the scrip - involving new ordinary shares to a value of 11.25p for each share held - T&N would retain cash of £46m: a saving of £37m on the dividend pay-out and £9m of advance corporation tax. It also promised a final cash dividend of not less than 3.35p if the scrip is taken up.

Mr Hope said savings from the scrip would help reduce the group's ACT problem, caused by having to use unrelieved UK profits to cover asbestos liabilities in the US. Earnings per share, meanwhile, rose from 7.7p to 4.8p.

COMMENT

T&N has successfully exploited the upturn in vehicle demand

and achieved double-digit profit margins two years earlier than most analysts expected. But it has an Achilles' heel - cashflow. The burden of asbestos compensation and rising capital expenditure threatens to overshadow the group's performance in outstripping profits forecasts by 20 per cent. The enhanced scrip - designed to save cash - looks attractive at first glance but risks diluting future earnings per share, as does the prospect of funding further acquisitions through paper. Although full-year pre-tax profits are expected to reach £115m, the shares look somewhat full on a forward multiple of 17.1, despite the strong growth potential.

Compensation provision 'clear in 10 years'

A sharp increase in asbestos-linked personal injury claims has forced T&N to make record compensation payments in the first half of this year, writes Tim Burt.

The company, which as Turner & Newall was formerly Britain's largest supplier of asbestos, paid claimants a total of £22.1m in the six months to June 30, compared with just £2m last time.

Mr Colin Hope, chairman and chief executive, said the sevenfold increase reflected the group's determination to settle as many outstanding cases as possible before a new compensation framework came into force in North America. Under the framework, claimants should avoid lengthy legal action by receiving fixed compensation payments for various forms of asbestos-linked illness.

The first-half compensation payments were paid from balance sheet provisions, which fell from £28.4m at the year end to £34.9m at the half-way stage.

Mr Hope predicted those provisions would decline gradually and could be wiped out altogether within 10 years. "The beneficial effect on gearing will be significant and it will help our future results enormously," he said.

Cattle's restricted by £1.76m closure costs

By Christopher Price

A good performance from its consumer credit business helped Cattle's (Holdings) lift interim pre-tax profits, before exceptional items, by 25 per cent to £24.5m, against £19.6m.

However, after taking a £1.76m charge against the closure of its Swinton operations, the outcome showed a slight decline to £22.8m.

Consumer credit turnover rose 11 per cent and contributed £26.1m (£27.8m) to a total of £104.2m (£98.7m), an increase of 6 per cent.

Mr Edward Cran, managing director, said that the contin-

ued improvement in the Shopcheck home collected credit business reflected a slow return of confidence among the group's 280,000 households. Cattle's has an estimated 30 per cent of the weekly collected credit market.

Mr Cran added that the closure of its Swinton operations was likely to be followed by the run-down of its other non-core activities, such as a small travel agency business. "We have positioned ourselves firmly in financial services and plan to continue this process," he said.

Earnings per share slid to 3.7p (4.5p). An interim dividend of 2.15p (1.9p) is declared.

Quarto static despite lacklustre book market

By Caroline Southey

Quarto Group, the USM-traded publishing and printing services company, saw sales advance 17 per cent at the interim stage despite a weak UK book market.

Pre-tax profits in the six months to June 30 rose from £1.63m to £1.87m on turnover ahead to £22.7m (£19.5m).

Operating profits improved to £1.91m (£1.66m). Mr Laurence Orbach, chairman, said sales had been affected by a shortfall in the UK publishing business but, based on current order books, he expected an improvement in

core publishing activities in the second half.

The effect of destocking by leading UK book retailers "had been profound" in the first six months but he believed this was temporary.

Turnover in the US, which accounts for 53 per cent of total sales, had been strong, boosted by a first time contribution from Front Line Art Publishing, a California-based publisher of art prints and posters, acquired in May.

Earnings per share fell from 6.4p to 4.8p, reflecting extra shares in issue following the £5.5m rights issue in September. An unchanged interim dividend of 2p is declared.

Production rise helps Brit-Borneo

By Robert Gorzine

A 31 per cent rise in production helped British-Borneo, the oil and gas exploration company, offset lower oil prices and boost net profits for the six months to the end of June to £4.36m, a 49 per cent increase on the previous £2.94m.

Earnings per share were 9.7p, also up 49 per cent.

The value of oil and gas sales rose 34 per cent to £17.5m (£13.1m), although the average oil price for the period fell from £12.20 to \$9.84 a barrel.

The company was helped by its strong position in natural gas, especially in the US, where prices firmed during the first half. Gas accounts for 60 per cent of British-Borneo's production revenues.

Mr Alan Geyson, chief executive, said the company was encouraged by its acquisition earlier this year of a 50 per cent stake in an onshore field in Cuba, its first big international diversification away from UK and US markets.

An unchanged interim dividend of 2.687p is declared.

Hartstone directors lift collective stake

By Peggy Hollinger

Four Hartstone directors have increased their collective stake in the hosiery and leather-goods group by more than seven times following the £30m rescue rights issue.

The company announced yesterday that the four directors, including Mr Shaun Dowling, chairman, had increased their holding from 71,133 to 585,000 shares.

The directors both took up their entitlements through the 2-for-1 rights at 15p and bought shares in the market at 15p and 14p.

The largest shareholder on the board is Mr Dowling, who now holds 500,000 shares, compared with 50,000 before the cash call. He took up 100,000 new shares in the rights, and purchased a further 350,000 at 15p in his role as sub-underwriter.

The other directors who increased their stakes are Mr John Hunter, chief executive, with 40,000 shares (10,000), Mr Stephen Oakley, finance director, with 30,000 (8,000) and Mr John Padovan with 25,000 (5,133).

At Hartstone's annual

meeting yesterday, Mr Dowling warned that the US leather-goods business was suffering from lower demand and the planned cutbacks under the restructuring.

Sales were at lower levels than last year, he said. Hartstone was confident trading would pick up in the second half, however.

The Spanish hosiery business, which may be sold at some stage in the future, was performing satisfactorily, he added.

Airsprung £9m expansion

Shares of Airsprung Furniture jumped 15p to 256p after the Wiltshire-based group announced a sizeable acquisition with a cautiously optimistic statement on current trading.

Airsprung is paying up to £9m cash for Intasco and Mensaco, both suppliers of components and finished products to furniture markets. Initial consideration is £7.16m with the balance on a performance-related basis. The eventual total will be met from existing resources and facilities.

In the year to June 30, Intasco reported pre-tax profits of £507,000 on sales of £3.82m. Mensaco made £703,000 pre-tax profit on turnover of £4.82m. Trading between the two companies, which were under common ownership, amounted to £1.31m.

Airsprung's trading since its March year-end had remained difficult, Mr John Pierce, chief executive, said, but the first quarter had shown a "satisfactory" increase in sales and profits.

NEWS DIGEST

Hartons cuts losses to £0.33m

Hartons Group, the distributor of semi-finished plastics, reduced pre-tax losses from £1.86m to £225,000 for the six months to June 30.

Turnover dropped 22 per cent from £33.1m to £25.7m, largely because of the disposal of a French subsidiary in March. Turnover for continuing operations rose slightly from £23.5m to £24m.

Losses per share worked through at 0.7p (2.8p) and no dividend is declared.

Silvermines

Following the acquisition in March of Molynx, the closed-circuit television company, Silvermines, the Dublin-based electrical services and property group, trebled pre-tax profits from £251,000 to £761,000 (£750,000) in the six months to June 30.

Turnover jumped from £12.3m to £20.2m. Earnings emerged at 1.23p (0.5p) and a 0.25p dividend is declared.

Linx

A "significant improvement" in the second half enabled Linx Printing Technologies to report a pre-tax profit of £332,000 for the year to June 30.

SmithKline Beecham PLC
Floating Rate Unsecured Loan Stock
1990/2010
Interest Rate: 5.3125% per annum
Interest Period: 1 September 1994 to 1 December 1994
Midland Bank plc
Agent Bank

The outcome amounted to less than a quarter of the £1.43m achieved last time, but reflected "an encouraging second six months of trading" following the deficit of £391,000 incurred in the first half, directors said.

Turnover of the group, which manufactures continuous ink-jet printers, fell 9 per cent to £10.9m (£11.5m).

Earnings emerged at 1.7p (7.1p) and a recommended final dividend of 0.75p (1.73p) makes a total of 1p (2.08p) for the year.

Ennex International

Ennex International, the Dublin-based mineral exploration company which is quoted on the USSE, announced a profit of \$95,000 (\$55,000) in the first half of 1994 against a loss of \$82,000.

Exploration expenditure amounted to \$374,000, of which \$230,000 was contributed by joint venture partners. Working capital at June 30 was \$3.4m, including cash of \$3.6m. Earnings were 10 cents (losses 10 cents) per share.

English & Overseas

English & Overseas Properties is to pay its first interim dividend since 1991, after lifting pre-tax profits from £12,000 to £253,000 for the six months to the end of June.

The company, which saw turnover rise from £1.7m to £1.84m, said the increase in profits came from two main

areas: increased rental income, both from properties developed by the group and from properties bought last year, and the sale of an investment property in Gateshead.

Investment properties are now valued at £26.8m in the balance sheet, compared with £1.43m at end-June 1993. Earnings per share worked through at 0.55p (0.05p); the interim dividend is 0.3p.

United Industries

United Industries, the precision tools and springs maker, has sold its Scandura Railco offshoot - just five months after its acquisition as part of a package from RRA Group.

The loss-making business, which makes heat shields and gasket materials, is being sold to Hofland (UK), a subsidiary of DNI Holding of the Netherlands, for \$605,000. United will retain debtors and creditors, estimated to be worth £200,000.

CRP Leisure

CRP Leisure plans to raise £900,000 through a placing and open offer to repay debt and fund acquisitions.

The USM-quoted company, whose only active subsidiary makes theatre scenery, is issuing 20m shares at 5p with a 5-for-4 clawback. The shares yesterday closed down 1p at 6p.

Shareholders, including the 14.2 per cent holding of RA Colman (North Wales), intend to take up their entitlements to a

total of 5.84m shares. A further 4.23m shares have been conditionally placed with Colman, which could leave it with a holding of 25.7 per cent.

Tate & Lyle

Tate & Lyle has acquired PL Transatore from Acatos & Hutchinson for £1.5m cash. PL, which provides specialist storage and transport services to Acatos and third parties, will form part of Tate's United Molasses division.

Allen

Shares in Allen, the Greater Manchester-based construction group, rose 11p to 170p yesterday following its announcement of a good start to the year.

Over the summer it had obtained contracts valued at £21.3m, turnover at its Speedy Hire Centres was 40 per cent above the same period last year and housing reservations were up 13.5 per cent.

Fyffes

Fyffes, the Irish fresh fruit importing and distribution group, has acquired a 33 per cent stake in Sofprim, a French fresh produce company.

The group is understood to have paid between £25m and £30m (£3.94m) for the stake, its fifth purchase in mainland Europe in a 12 month 1945m spending spree.

NEWS IN BRIEF

In the Etryp Grange Country House Hotel, Greater Manchester, for about £1m cash.

RIVER & MERCANTILE Trust has sold 49.5 per cent of River & Mercantile Investment Management to Beckwith Asset Management for £4.3m cash.

REGAL HOTEL Group has acquired a 50 per cent interest

satellite equipment, to its management in a deal valued at up to £17m.

TEMPLETON EMERGING Markets Investment Trust will convert its C shares into ordinary shares and new warrants on September 9. The record date for conversion will be September 6.

ROLLS-ROYCE HALF YEAR RESULTS 1994

- Profit before tax £40m (1993: £31m).
- Operating margins improved from 8.9% to 9.9%.
- Maintained interim dividend of 2.00p.
- Net cash £309m.
- Order book £5.9bn.

Group Profit and Loss Account

	Half year to 30 June 1994 Unaudited £m	Half year to 30 June 1993 Unaudited £m	Year to 31 December 1993 Audited £m
Turnover	1,500	1,752	3,518
Profit before taxation	40	31	76
Taxation (including overseas tax and ACT)	(9)	(10)	(18)
Attributable to minority interests	-	1	5
Profit attributable to shareholders	31	22	63
Dividends	(25)	(19)	(56)
Transferred to reserves	6	3	7
Earnings per ordinary share	2.53p	2.21p	5.95p

Group Balance Sheet & Cash Flow

	30 June 1994 £m	30 June 1993 £m	31 December 1993 £m
Net cash balances/(borrowings)	309	(132)	473
Cash (outflow)/inflow	(164)	(216)	389*
Equity shareholders' funds	1,229	906	1,225

*includes £307m rights issue proceeds.

"The profit increase has been delivered in the face of lower sales in both our aerospace and industrial power operations, and reflects our restructuring programme, which is proceeding ahead of plan.

"Conditions remain extremely challenging in all our markets, but our greater productivity coupled with the completion of the major part of the Trent engine development programme will enable us steadily to improve our performance.

"Although market conditions are unlikely to improve before 1996, we are in a good position to exploit the long term growth potential of both aerospace and industrial power from an increasingly competitive cost base."

Sir Ralph Robins, Chairman



Rolls-Royce plc, 65 Buckingham Gate, London SW1E 6AT.

The comparative figures for the year to 30 June 1993 have been audited from the Group's accounts for that year, which have been delivered to the Registrar of Companies. The figures have been reported on these accounts but they do not constitute a statement under section 237(2) of the Companies Act 1985. Details can be obtained from the above address.

RECRUITMENT

JOBS: The City is still waiting for the first female to chair a top 100 company

Women set for power in the big league

Sooner or later a woman is going to become the chairman of an FT-SE 100 company. It may have escaped the notice of some men out there but the race is on. The question many businesswomen are asking is who is going to be first.

Suppose it is within the next 10 years; in fact let's be more adventurous and look at the possibility before the turn of the century. Who might it be? Where will the candidates come from?

Gill Carrick, a partner at Goddard Kay Rogers & Associates, the executive search firm, sides with those who expect a woman to break through before the Millennium.

She said: "I think it could well happen within the next five years but I don't think it would necessarily cause a surge. I think we shall have one and then a shocked silence as people assimilate it before we gradually get a few more."

The latest edition of Crawford's Dictionary of City Connections noted that the number of women chief executives of listed UK companies had fallen from 12 in 1993 to nine this year. The only women chairmen of sizeable companies were Aleksandra Clayton of Alexander Holdings, the car dealer, and Anna Vint, joint chairman of the Reflect Shop.

The big league of the FT-SE 100, however, still awaits its first

woman chair. Here is a very subjective form guide gleaned from a trawl of colleagues, headhunters and a few industrialists. Could it be any of the following 11? They are listed in no particular order of preference.

● Rosalind Gilmore, chairman of the Building Societies Commission. At 56, with a civil service background, part of which was spent at the Treasury, she certainly has gravitas, and the robust way she handled the Cheltenham and Gloucester's proposal to sell out to Lloyds Bank proves she also has the metal to take on a top job when she leaves near the end of the year.

At present she is the prospective chairman of the Arrow FM consortium bidding for the London FM radio franchise but she is also well placed to take on a bigger chairmanship if one becomes available.

● Kathleen O'Donovan, at the BTR industrial conglomerate, must be a strong contender. She is the first woman finance director in an FT-SE 100 company at the age of 34, and that move, in 1991, won her the European Women of Achievement Award sponsored by the European

Union of Women. She recently took up a non-executive directorship at Ardagh, a Dublin-based glass maker.

● Rosemary Thorne, finance director of J Sainsbury. Apart from collecting more than 20 O-levels she has the sort of industrial street cred still valued by male-dominated boardrooms. Her business teeth were cut as a management accountant with BOC, the industrial gases company, before moving into retailing.

Her experience, particularly with Habitat-Mothercare and Harrods, gives her a strong platform for a big retailing chairmanship if and when it comes along.

● Baroness Delta O'Cathain, the former managing director of the Milk Marketing Board and current managing director of the Barbican Centre, still has a series of non-executive directorships. A few years ago she would probably have been the favourite because she occupied a very narrow field. This tended to leave her somewhat overexposed at a time when the names of women executives were difficult to recall.

● Marjorie Scardino, chief execu-

tive of The Economist Group and non-executive director of W H Smith, is a US-lawyer turned media executive. Her success in increasing the newspaper's sales in the US made her an automatic choice for The Economist job.

● Bridget Macaskill, former marketing manager at Unigate, now president and chief operating officer of Oppenheimer Management (the seventh-largest marketer of mutual funds in the US, controlling \$20bn) and a non-executive director of Hillsdown Holdings.

● June de Moller. When she took over as managing director of Carlton Communications just more than a year ago she became the first woman to the chief executive's job at an FT-SE 100 company. In an expanding industry she has to be well placed to take on a chair although she will probably have to wait a while if she is hoping to succeed Michael Green as chairman. Her non-executive directorships include Anglian Water and Riverside Medical Health Trust.

● Pippa Wicks is far too young to be considered in the short term but she has great potential. Wicks is the

31-year-old finance director of Courtlands Textiles. She is among those MBA-qualified finance directors who are prized as much for their general boardroom skills as they are for their ability to run the finance function. Recruited by Martin Taylor, the then chief executive, before he moved to Barclays Bank, she is likely to emerge as a strong contender in a few years' time.

● Helen Schneider Lenné on the main board of Deutsche Bank and a non-executive director of ICI. Schneider Lenné is one of the new breed of Euro-directors bounding into the large British boardrooms.

● Rachael Lomax, 48, head of the economic secretariat in the Cabinet Office, was formerly head of financial institutions and markets in the Treasury and a one-time principal private secretary to Nigel Lawson, the former chancellor. For some time she has been regarded as one of the Treasury high-flyers and ranks among those civil service women who have been able to thrive, partly because of its greater

concern in recent years to provide equality of opportunity.

● Wenche Marshall Foster: chair-

man and chief executive of Perrier (UK). If you can sell bubbly water in green bottles to the conservative British anything is possible.

Other women in high earning City jobs such as Carol Galley, director in charge of pension funds at Mercury Asset Management, and some of the leading headhunters, tend to rule themselves out because of their existing work. Because of the conflict of interest, Galley is not going to take on a non-executive role so she is probably among the non-starters.

A best of the rest list might include Kamlesh Bahl, chairman of the Equal Opportunities Commission, Frances Heaton, a director of Lazard Brothers merchant bank and former director general of the take-over panel, and Megan Richardson, director of planning at Barclays.

Elizabeth Symons, general secretary of the Association of First Division Civil Servants, is daily handling some of the most powerful mandarins in the country. Yve Newbold, company secretary at Hanson, should probably be among the dozen top contenders. The only reason she isn't is that company

secretaries rarely make the top job. It is no coincidence that many of those I have listed above are finance directors or have backgrounds in finance.

Mary Baker, president of Women in Management (a professional management association for women in the UK), who could easily claim a place on the list herself with non-executive directorships at four quoted companies, believes that the Cadbury recommendations for the chairman and chief executive function to be split has increased flexibility for a potential female appointment, possibly from outside a particular company. "Women are very good at being number one which is why so many leave the corporate structure and set up their own business," she said.

Who could we list as non-starters? Lady Thatcher comes to mind. It would be rather akin to the Rolling Stones playing at the London Palladium. They could do it with ease but the orchestra would walk out.

The 11 suggestions are only for that coveted large company chairmanship role. Some would be too young if you believe that a woman is going to get there in the short term. But they have been a long time waiting and may have to wait some more. If I were a betting type I might have a flutter on Gilmore.

Richard Donkin

DEPARTMENT OF ECONOMIC DEVELOPMENT
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The successful applicant will be qualified to the third level and have extensive senior management experience in the private or public sectors. A sound knowledge of labour market matters, with particular reference to the operation of employment and training services, is essential.

A job information sheet is available on request from Mr W P Hagan, Department of Economic Development, Massey Avenue, Belfast BT4 2JP, Telephone 0232 529339.

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Issued by Midland Bank plc

INVITATION OF APPLICATION FOR A GENERAL MANAGER

The European Dredging Association (Eda) is the representative European organisation for the individual dredging companies and the national representative organisations. The offices are located in Brussels, Belgium.

Eda was founded in December 1993 as a non-profit Association in accordance with the Belgian law with the general objective of studying and solving all problems related to the European dredging industry including the international co-operation and representation, in the widest possible sense and in particular within the framework of the European Union and related areas.

The Board of Directors of Eda is seeking a well-qualified experienced candidate as General Manager of the Secretariat of Eda to succeed the current General Manager. The General Manager should be a dynamic self starter, able to initiate new policies and processes in this young and growing organisation.

Specifically the successful candidate should meet the following requirements:

A University degree in Economics, Law or Engineering, preferably with a background in Transport Policy.

Specific knowledge of the general issues of the dredging industry is mandatory, with several years of relevant experience related to the maritime sector.

Proven experience within an international organisation; demonstrated lobbying and contractual capabilities inherent to functioning within the European Union.

Proficiency in written and spoken English and Dutch plus a working knowledge in French and/or other languages of the European Union.

Excellent drafting skills to prepare reports and analyses.

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Interested candidates for the position of General Manager of Eda should submit their application with full CV and other relevant details before the 15th of September 1994 to the Chairman of the Board of Eda.

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The IDB is an international financial institution dedicated to promoting economic and social development in Latin America and the Caribbean. Position offers excellent salary and benefits package, including relocation costs. Resumes should be received by September 12th. Send to: HUR-RO-SWIFT IDB Stop EC0507 1300 New York Avenue NW, Washington, DC 20577; or FAX (202) 623-3096. The Bank regrets that it is able to respond only to applicants who best meet position requirements.

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Applicants should either be nationals of a Member State of the European Community, nationals of a European Economic Area Member State (i.e. Austria, Finland, Iceland, Norway or Sweden) or Commonwealth citizens who have an established right of abode and right to work in the United Kingdom. Applications are welcome from individuals and companies.

Salary will be subject to negotiation.

Closing date for receipt of completed applications is 23 September 1994.

Please apply, enclosing a detailed curriculum vitae, to Mrs M McKell, Ref AHB69/MMK/FT, Abercrombie House, Eaglesham Road, East Kilbride, Glasgow G75 8EA.

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ACCOUNTANCY COLUMN

FINANCIAL TIMES FRIDAY SEPTEMBER 2 1994

Little has changed in a quarter of a century

Andrew Jack looks at the first edition of Accountancy Age and sees a continuity of issues over 25 years

Twenty five years ago, Neil Armstrong took his first steps on the moon, Concorde made its inaugural flight, parliament abolished the death penalty and the London School of Economics was closed by student protests.

Predictably enough, things were rather more static in the conservative world of British accountancy. But not everything stood still. On Friday December 5, 1968, a new weekly specialist journal came into existence which continues to thrive: Accountancy Age.

The senior editor was Robert Willott, now in charge of Willott Kingston Smith, a specialist London-based accountancy firm. The advertisement manager was Maurice Satchell, who later decided to go it alone. The publisher was Michael Heseltine's Haymarket group.

Some 62,750 copies were distributed free to all qualified accountants, including members of the Institute of Cost and Works Accountants (now Chartered Institute of Management Accountants) and the Association of Certified and Corporate Accountants (now the Chartered Association of Certified Accountants). Others could pay two shillings for the privilege of hearing an independent voice for the profession.

Flicking through the 32 pages of the first issue, the format looks strangely familiar to readers of the Age today. There are differences, of course. In common with many newspapers at the time, there were no by-lines on the stories to indicate who had written them.

tight restrictions imposed by the Institute of Chartered Accountants in England and Wales: advertising or soliciting for new business by accountancy firms is prohibited. Members could give their names and call themselves "chartered accountants" if quoted on television or in print, but they were forbidden from mentioning the name of their firms.

Salaries also reflected the era. The advertisement section tantalised with some jobs paying as much as £5,000, and remuneration for an equity partner designate in an accountancy firm of £3,000.

There is a piece about the Canola 1200 electronic desk calculator, "probably the cheapest of its kind available in this country" at £325, which is able to multiply and divide numbers. Its dimensions were 10.5 inches by 13 inches.

On the same page, the Decimal Training Company is selling plastic replicas for training purposes of Britain's new decimal coins, scheduled to be introduced in February 1971. "Experience has shown that even when checking-out cashiers have been trained it is realistic to expect that checking out will take longer," it warns.

One of the most happy and visible changes since that early era is the disappearance of an enormous number of sexist advertisements, with skimpily-clad women draped around the most mundane products on the slightest pretext.

Even the editorial judgments were affected. Page two of the first issue includes a large photograph of Gail Renshaw, Miss USA, and runner up in

the Miss World contest. The justification for her appearance was that she was studying for her CPA qualification with a firm in Lexington, Georgia.

But perhaps the biggest surprise to a contemporary reader of the original edition of Accountancy Age is how little the issues of the day have changed in the last quarter of a century.

The most prominent front page story deals with "staff shortages and legislative complications" at the Inland Revenue threatening a "tax crisis". The board of the Revenue had called for a three-year standstill on all new tax legislation, while the accountancy profession was demanding in its "annual plea" simplification and removal of anomalies and "hastily conceived" proposals.

Mr N C Price, deputy chairman of the board, complains that "we do say in the most forcible terms that we do not want anything new until we have had time to digest what we were given in 1965." Meanwhile, the Confederation of British Industry was criticising tax changes "for not having been thought out sufficiently well in advance".

The Revenue also seemed concerned that youth clearly had its mind more on Bob Dylan and drugs than on matters fiscal, since it bemoaned the difficulties in retaining staff and the need to remove both the "material and psychological barriers" to the recruitment of graduates.

The tension of the "dual role" of accountants also featured prominently: an article highlighted the claimed conflict of interest when audi-

tors also act as consultants, accountable in the first role to shareholders and in the latter role to the board.

One anonymous consultant complained to the Age that the role of the accountant as the statutory auditor should be made more "constructive", and that management information services provided by the firms should be restricted to these areas.

The story was triggered by apparent concerns from management consultants under threat because the Institute had lifted its ban on marketing for the consulting arms of the firms - a move welcomed in one of the Age's first editorials.

A second editorial supports calls from Lord Shawcross, then chairman of the City Takeover Panel, for the accountancy profession to clarify current practices. His concern was the inconsistencies in financial reporting, and the fact that the existing limited guidelines issued were not mandatory.

Ironically, the first profile of a "leading figure" was Sir Joseph Latham, who had quit AEA after its takeover by GEC at the end of a hotly contested battle. Disputes about the profit forecasts made by AEA - to which Shawcross was in part referring - became the starting point for the creation of the Accounting Standards Committee, forerunner of the Accounting Standards Board.

"I could sit down with auditors in most big companies, produce two widely different forecasts and convince the auditors of the validity of each," Sir Joseph says. He makes a plea for accountants to present "reality" not the figures as shown in "an

orthodox accounting statement".

Mr Ronald Leach, yet to be knighted in 1989 but that year's president of the Institute of Chartered Accountants in England and Wales and senior partner of Post Marwick Mitchell, was also quoted in an extensive interview with the magazine.

His most important concern? The ill-fated attempt to integrate the different professional accountancy bodies. His view was that modernisation and consolidation was essential, and the chance to merge the bodies might never be possible again.

He talked about the possibility and complexities of the incorporation of accountancy firms, partly reflecting their desire to try to raise external capital to help fund their operations and also to protect them from unlimited liability at a time of rising legal claims and escalating insurance costs.

He discussed rotation of audit firms - on which he was open-minded - and the tensions of auditors getting too close to management - which he argued did not in his experience jeopardise independence.

Leach suggested there was likely to be greater consolidation of the firms, a shift of clients towards large firms and single worldwide auditor, and predicted a move towards accountancy becoming a graduate profession.

Some of his predictions have clearly held true. Yet overall, the message of the Age seems to be that little of substance has changed at all in its first 25 years of existence. When it celebrates its 50th anniversary, much of the profession might take some secret comfort from that.

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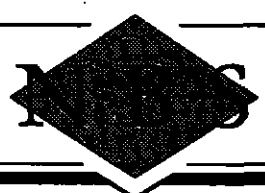
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You must possess proven interpersonal skills, be task orientated and capable of working on your own initiative. Individuals who strive for excellence will enjoy unparalleled opportunities for career advancement.

Interested candidates should write to Charles Austin or Tim Bates enclosing a full Curriculum Vitae and quoting reference CA470, at Harrison Willis, Cardinal House, 39-40 Albemarle Street, London W1X 3FD.

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Passed Finalists List

The names given below are successful candidates in CIMA's Stage 4 (final) examination taken in May 1994. In the United Kingdom the pass rate was 43.22%. The pass rate for home and overseas students combined was 33.86%. The locations given are those of the exam centre where the candidates sat.

[illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible]

I **IR** INGLIS, Aberdeen; **DJ** INGRAM, Birmingham; **M** IRVINE, London East; **AMM** ISMAIL, Colombo; **PH** IVENS, London West; **JH** IZZARD, London West; **PM** KAY, Glasgow; **PM** KAY, Johannesburg; **J** MCKENNA, Edinburgh; **JG** MCKENNA, Stiles; **JO** MCKINNON, Stages; **GF** MCLACHLAN, Glasgow; **AM** MCLAUGHLIN, Glasgow; **JA** MCLEOD, Peterborough; **PA** MCLELLAND, Leeds; **J** MCLEOD, St Austin; **NG** MCGOUGHAN, Middlesex; **trough;**

J HOD MACK, London West; AC JACKSON, Bristol; DE JACKSON, New York; DM JACKSON, Philadelphia; MC JACKSON, London; NJ JACKSON, Wakefield; GP JACKSON, London Central; D JACOBS, Southampton; P JACOUES, Plymouth; PJ JACQUES, Southampton; AJ JAMES, Southampton; R JAMES, Chelmsford; W JAMES, Shrewsbury; JS JAMES, Maidstone; JM JAMES, Sheffield; MR JAMESON, Liverpool; K JANAGAL, Southampton; A JANAKI, Vellore; A JANAKI, Chennai; S JANAKI, Pune; RJ JAYAKARNA, Kolkata; MO JAHARI, Adelaide; RA JAYARAMAN, Tamil; PMB JAYARAJA, Colombo; CA JAYASINGHA, Colombo; J JEACOCK, London Central; G JEFFREY, London North; B JEGANATHAN, London South; PJ JESANATHAN, Kingston Upon Thames; P JESHAMOHAN, Berkeley; K JENNINGS, Wigorn; M JENKINS, London North; S JENSEN, London North; L JESSER, London North; RE JENSEN, Oxford; TJ JEVHARY, Durham; DE JOHNS, Stoke; DE JOHNSON, Derby; DT JOHNSON, Birmingham; M JOHNSON, Nottingham; PA JOHNSON, Basingstoke; C JOHNSON, London North; DJ JOHNSON, London Central; AC JONES, London West; DK JONES, Liverpool; GA JONES, Southampton; HM JONES, Newcastle; HW JONES, Swansea; J JONES, London North; L JONES, London North; TR JONES, London West; PJ PADJORN, London Central; A JOSH, London North; G JOYCE, Maidstone; ME JOYCE, Oak; J JOYCE, Cardiff;

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The ability to write in a concise, compelling and consumerfriendly manner, in English, French and Dutch, would be an added advantage.

This position is likely to appeal to a person with at least five years experience in the marketing of securities and aged between 30 and 40 years, possibly a Belgian national who has worked abroad and envisages returning to Belgium.

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Interested candidates are invited to call Anne SOENEN on 02/647.53.50 or alternatively to send or fax their detailed c.v., quoting reference Petercam, to: ROBERT HALF BELGIUM (a division of FONTAINE-ARCEUR-VAN DE VOEDER S.A./N.V.), c/o Avenue Général de Gaulle 47, B-1050 Brussels, fax number 02/646.30.38.

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To find out more about the challenges involved, send an application and curriculum vitae to:

SANDOZ INTERNATIONAL LTD
Personnel Department
Ref 4204, Ms M Baumli
PO Box, CH-4002 Basle
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Sophia Shaw,
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REGENT PACIFIC GROUP

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Essential: the highest standards of financial management and probity and a proven track record in the planning and control of the financial affairs of a substantial institution.

Desirable: extensive accounting experience and knowledge of the workings of large scale arts and/or media organisations, particularly in the public sector.

Salary by negotiation.

Applications should be made in writing, to include a CV and sent to: Dennis Marks, General Director, ENO, London Coliseum, St Martins Lane, London WC2N 4ES.

Closing date 14 September 1994.

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Experience within the oil/gas industries in the above areas is essential. The ability to communicate fluently in English and Arabic is a prime requirement, particularly the ability to read/write Arabic. A working knowledge of Russian, as well as French or German is desirable.

Salary £35,000 plus benefits

Please reply in writing, with your CV to Box A2142, Financial Times, One Southwark Bridge, London SE1 9HL.

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COMMODITIES AND AGRICULTURE

LME aluminium prices surge to 3 1/2-year highs

By Richard Mooney

Aluminium prices reached 3 1/2-year highs at the London Metal Exchange yesterday as traders anticipated further improvements in the market's fundamental picture.

Expectations that the multi-lateral pact agreed earlier this year to cut output would continue to eat into stocks of the metal, already bolstered by Wednesday's news of threatened power cuts at Kaiser's Chatsworth smelter, were given a further fillip by the likelihood of a pipeline closure at an Australian plant (see adjacent story).

The helped the LME's three months delivery price to break through the resistance area around \$1,550 a tonne to touch \$1,570 before closing at \$1,564,

up \$29.50 on the day and \$51.25 on the week so far.

"The move on aluminium today was always on the cards considering recent news of production problems and improving charts," one dealer told the Reuters news agency. "Prices are now set to go higher."

As cuts under the multi-lateral pact have worked through LME stocks of aluminium have declined by more than 200,000 tonnes, or 7.5 per cent, from the record level reached at June 10. Producer stocks have also shown a substantial fall in recent months. And with developed economies moving out of recession demand for aluminium is generally expected to pick up quite strongly.

"We may be on for levels around \$1,600 soon," the dealer told Reuters.

Strike to force cut at Australian smelter

Australia's largest aluminium smelter, Tomago, would close down one of its three potlines on Monday because of a strike, human resources manager Mr Graham Taylor said yesterday, reports Reuters from Sydney.

Closure of the 160 pots in Potline Two at the smelter near Newcastle in New South Wales would reduce annual production by 80,000 tonnes to 280,000 tonnes.

"The decision was taken purely on health and welfare considerations for our staff who are keeping the other two potlines operating during the strike," Mr Taylor said.

On August 12 some 700 workers went on strike in support of a demand for an 8 per cent pay rise. Mr Taylor said the striking workers voted at a meeting yesterday to continue the stoppage indefinitely.

Show-piece diamond mine shares the market's strain

By Kenneth Gooding, Mining Correspondent, in northern Transvaal

Turbulence in the global diamond markets is being felt even here at Venetia, De Beers' newest diamond mine, 20km from South Africa's borders with Botswana and Zimbabwe.

Only weeks before the mine came into production in July 1992 at a cost of US\$400m, De Beers' Central Selling Organisation, which controls 80 per cent of world trade in rough (uncut) diamonds, imposed quotas on its producer-supplier because of a flood of stones from Angola. For a time Venetia, the first mine of any sort in South Africa to gain permission for seven-day working, moved to a five-day week.

This year it has gone back to seven-day working as the quotas were eased so that the CSO now accepts 85 per cent of the diamonds it contracted to take from producers. However, there is still turmoil in the diamond market, caused by uncertainty about Russian exports following "leaks" of stones from that country outside its contract with the CSO.

Consequently, Mr Hans Gastrow, general manager, says that this year Venetia will process 4.3m tonnes of ore, 6.5 per cent below its capacity. It is also mining an area of lower grade ore, which has fewer diamonds in each tonne.

Mr Gastrow is giving no forecasts but all this implies that output will be well below the 5.6m carats a year De Beers predicted Venetia would yield at full production.

Last year the mine, building up rapidly, more than doubled output and processed 3.6m tonnes of ore to recover 4.6m carats. About 70 per cent of Venetia's diamonds are of gem quality and analysts suggest that at \$100 a carat on average the mine is generating annual sales of about \$600m.

Mr Gastrow says that, apart from the imposition of the CSO quota, Venetia quote has made a remarkably smooth transition from construction to production. This year will be a time of consolidation.

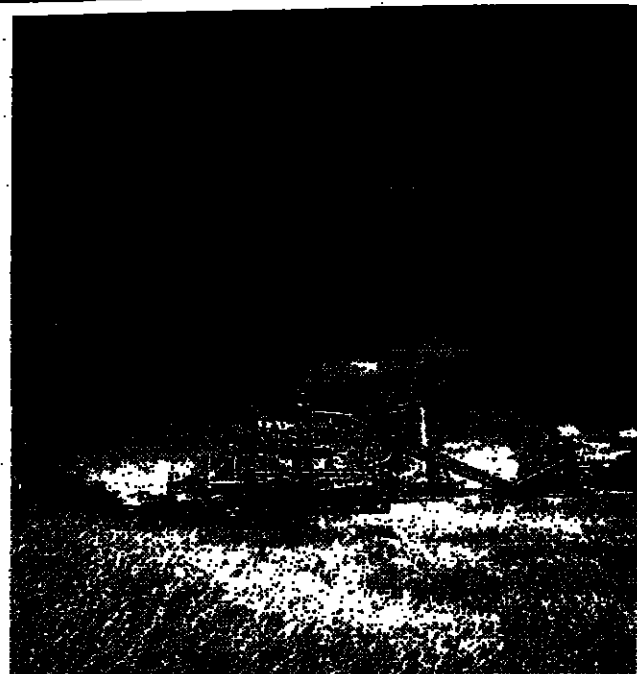
He insists that the quota is having no impact on employment. Nevertheless, Venetia originally was to have employed 870 and it now has

764. A mine of Venetia's size in the past would have employed 2,000. The total has been kept down here partly by highly automated process plant but also by fewer people employed just to see that other people are doing their jobs," according to Mr David Gadd-Clarke, ore extraction manager.

Venetia was the first new South African diamond mine for 25 years. It is also the country's biggest diamond mine and a major contributor of export earnings.

The mine has also revitalised De Beers' production, as it is accounting for half the group's output in South Africa and replacing production from its 100-year-old Kimberley mines, which are now fading away.

Venetia's success is strategically important to De Beers because, when its output is added to that in Botswana and Namibia, it gives the group direct control over more than 50 per cent of world rough gem diamond output. This provides a major base for the CSO to work from and gives it a powerful position from which to negotiate with other producers in the diamond cartel.



Some highly innovative ideas are being tried at Venetia

And, while Venetia is using conventional methods to mine about 500m tonnes of waste and to mine and process 100m tonnes of ore over its projected 25-year life, it is trying some highly innovative ideas about labour relations and environmental issues, at least as far as South Africa is concerned. For example, there are no migrant workers at the mine. Employees are bussed in from

nearby towns for twelve hour shifts and then return to their families. Venetia is also breaking with the De Beers' tradition that, for security reasons, no equipment leaves the mine but is buried within the top security area once it is no longer useful. Here worn out equipment will be stockpiled and sold off when the mine closes. It could be worth millions of dollars.

'Big livestock cuts needed to meet EU pollution targets'

By Deborah Hargreaves

Livestock numbers in the Netherlands, Belgium and Denmark would have to be cut dramatically if the European Union was to reach its targets for reducing nitrate concentrations in drinking water, Mr Bob Crabtree from the Macaulay Land Use Research Institute, told a conference in Aberdeen yesterday.

He cited a report from the US Department of Agriculture forecasting that livestock herds would have to be cut in the Netherlands by 65 per cent, in Belgium by 28 per cent and in Denmark by 9 per cent over eight years.

The cuts would have to occur if producers, particularly in intensive farming regions, were unable to dispose of their slurry and animal manure in

an environmentally acceptable friendly way.

"With water pollution from chemicals, nitrates and phosphates has increased during the last decade, particularly in the more intensive farmed areas of Europe," Mr Crabtree said.

The EU's nitrates directive, which was published in 1991, advocated setting up nitrate vulnerable zones where restrictions would be placed on the timing and quantity of organic manure disposal. The Ministry of Agriculture has proposed 74 zones for the UK.

Mr Crabtree said the creation of the zones would place a heavy and expensive burden on many livestock farmers. "Some intensive units will need to invest in increased storage facilities for slurry and manure while seeking ways to

dispose of waste over a wider area than has been necessary in the past," he said.

He also called for increased research into technical solutions to the use of farm waste, other than the traditional spreading of slurry and manure on the land.

In countries such as the Netherlands and Belgium where intensive farming was more widespread, the impact of the nitrates directive could erode some competitiveness, Mr Crabtree suggested. But he questioned whether that would be politically feasible.

"There will undoubtedly be an erosion in the competitive position of designated areas and a progressive transfer of production to less vulnerable areas as fixed investments depreciate and need replacement," he said.

World timber shortage hitting British sawmills

By Deborah Hargreaves

A worldwide shortage of timber is pushing up prices for logs in the UK and leading to supply dislocations as sawmills struggle to secure their raw materials.

Many British sawmills are trying to run their plants at double shifts to cope with the increase in demand, but are having difficulties getting hold of logs.

The Forestry Commission reported a 9 per cent rise in the price of standing timber in the six months to the end of March as demand picked up when the economy began to emerge from recession. The commission also said that softwood log prices

increased by 16 per cent in the year to the end of March.

"We've almost certainly seen prices higher than that in the past five months - just judging from the timber we've sold," said Mr Martin Wilkinson, forestry operations director at Tihill Economic Forestry, a division of Booker, which manages 12 per cent of the UK's private woodland.

The UK, which ranks the eighth largest consumer of wood and wood products in the world, produces only 14 per cent of its own requirements domestically. Its import bill for logs from Canada, Scandinavia and Russia among other suppliers amounts to nearly \$7m. But imports are dropping off

after reaching a peak in 1989 as environmental concerns worldwide restrict the harvest of natural forests. The value of timber imports to the UK has declined from £10bn in 1989 to £5bn in recent years.

In addition, growing consumption of wood in many developing countries has led to fewer exports.

Mr Jim Mosley, president of the Timber Packaging and Pallet Manufacturers' Association, said makers of wooden pallets had seen their wood costs increase by 20 per cent over the past six months due to timber shortages.

Pallet makers are in competition with the construction industry and fencing manufac-

turers for tight timber supplies. "Pallets play a vital part in Britain's export drive. This timber shortage will make the export drive falter and higher pallet prices could make exporters less competitive in foreign markets," Mr Mosley said.

As more British tree plantations reach maturity, the UK is expected to become more self-sufficient in wood production. It should be able to supply 27 per cent of its needs by 2010.

Mr Wilkinson expects timber output in Britain to reach a peak in 2025 when production should touch 22m cubic metres a year, but by then demand will have grown from a current

55m cubic metres to 75m cubic metres.

The government recently introduced a new incentives package for landowners to plant commercial trees, but Mr Wilkinson believes it is insufficient to compete for agriculture - the value of which is buoyed by European Union subsidies.

"There is a lot of agricultural land which is eminently suited to growing conifer trees, if farmers were given incentives to plant trees on set-aside land, we could grow a lot more wood than we do now," he said.

Trees need to be planted now for harvesting in 30 years or otherwise many plantations will reach their peak and then output will drop off.

COMMODITIES PRICES

BASE METALS

LONDON METAL EXCHANGE

(Prices from Antismelted Metal Trading)

ALUMINIUM, 99.7 PURITY (% per tonne)

	Cash	3 mths
Close	1539.50	1563.50
Open	1539.50	1554.50

	1510.5-1	1540-0.5
Kerb close	1510.5-1 <td>1540-0.5</td>	1540-0.5
Open int.	274.155	N/A
Total daily turnover	59,537	

ALUMINIUM ALLOY (% per tonne)

	1550-80	1575-80
Close	1550-80	1575-80
Open	1550-80	1575-80

	1540-50	1565-70
Kerb close	1540-50	1565-70
Open int.	2,771	N/A
Total daily turnover	793	

LEAD (% per tonne)

	601.5-2.5	616-7
Close	601.5-2.5	616-7
Open	601.5-2.5	616-7

	605.5-6.5	608.5-6
Kerb close	605.5-6.5	608.5-6
Open int.	588.7	610.5-1
Total daily turnover	40,326	

NICKEL (% per tonne)

	6345-55	6435-40
Close	6345-55	6435-40
Open	6345-55	6435-40

	6105-75	6250-60
Kerb close	6105-75	6250-60
Open int.	4,481	N/A
Total daily turnover	17,378	

ZINC, special high grade (% per tonne)

	5400-5	5470-5
Close	5400-5	5470-5
Open	5400-5	5470-5

	5375-85	5485-80
Kerb close	5375-85	5485-80
Open int.	17,424	N/A
Total daily turnover	4,481	

ZINC, special high grade (% per tonne)

	5400-5	5470-5
Close	5400-5	5470-5
Open	5400-5	5470-5

	5375-85	5485-80
Kerb close	5375-85	5485-80
Open int.	17,424	N/A
Total daily turnover	4,481	

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	5375-85	5485-80
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LONDON SHARE SERVICE

BANKS

Company	Price
Barclays Bank	125.00
Bank of Scotland	110.00
Bank of Ireland	105.00
Bank of Montreal	100.00
Bank of America	95.00
Bank of England	90.00
Bank of China	85.00
Bank of India	80.00
Bank of Japan	75.00
Bank of Korea	70.00
Bank of Taiwan	65.00
Bank of Thailand	60.00
Bank of Vietnam	55.00
Bank of Indonesia	50.00
Bank of Malaysia	45.00
Bank of Singapore	40.00
Bank of Hong Kong	35.00
Bank of New Zealand	30.00
Bank of Australia	25.00
Bank of South Africa	20.00
Bank of Argentina	15.00
Bank of Brazil	10.00
Bank of Chile	5.00
Bank of Colombia	4.00
Bank of Ecuador	3.00
Bank of Peru	2.00
Bank of Venezuela	1.00

CHEMICALS

Company	Price
ICI	120.00
Shell Chemicals	110.00
BP Chemicals	105.00
Amoco Chemicals	100.00
Exxon Chemicals	95.00
Chevron Chemicals	90.00
Elf Chemicals	85.00
Agip Chemicals	80.00
Eni Chemicals	75.00
Indesit Chemicals	70.00
Montedison Chemicals	65.00
Snamprogetti Chemicals	60.00
Eni Chemicals	55.00
Indesit Chemicals	50.00
Montedison Chemicals	45.00
Snamprogetti Chemicals	40.00
Eni Chemicals	35.00
Indesit Chemicals	30.00
Montedison Chemicals	25.00
Snamprogetti Chemicals	20.00
Eni Chemicals	15.00
Indesit Chemicals	10.00
Montedison Chemicals	5.00
Snamprogetti Chemicals	4.00
Eni Chemicals	3.00
Indesit Chemicals	2.00
Montedison Chemicals	1.00
Snamprogetti Chemicals	0.50

ELECTRONIC & ELECTRICAL EQPT - Cont.

Company	Price
Siemens	120.00
ABB	110.00
Alstom	105.00
General Electric	100.00
Westinghouse	95.00
Hitachi	90.00
Fuji Electric	85.00
Sanofi	80.00
Novartis	75.00
Roche	70.00
Novartis	65.00
Roche	60.00
Novartis	55.00
Roche	50.00
Novartis	45.00
Roche	40.00
Novartis	35.00
Roche	30.00
Novartis	25.00
Roche	20.00
Novartis	15.00
Roche	10.00
Novartis	5.00
Roche	4.00
Novartis	3.00
Roche	2.00
Novartis	1.00
Roche	0.50

EXTRACTIVE INDUSTRIES

Company	Price
BP	120.00
Shell	110.00
Amoco	105.00
Exxon	100.00
Chevron	95.00
Elf	90.00
Agip	85.00
Eni	80.00
Indesit	75.00
Montedison	70.00
Snamprogetti	65.00
Eni	60.00
Indesit	55.00
Montedison	50.00
Snamprogetti	45.00
Eni	40.00
Indesit	35.00
Montedison	30.00
Snamprogetti	25.00
Eni	20.00
Indesit	15.00
Montedison	10.00
Snamprogetti	5.00
Eni	4.00
Indesit	3.00
Montedison	2.00
Snamprogetti	1.00
Eni	0.50

HEALTH CARE - Cont.

Company	Price
Novartis	120.00
Roche	110.00
Novartis	105.00
Roche	100.00
Novartis	95.00
Roche	90.00
Novartis	85.00
Roche	80.00
Novartis	75.00
Roche	70.00
Novartis	65.00
Roche	60.00
Novartis	55.00
Roche	50.00
Novartis	45.00
Roche	40.00
Novartis	35.00
Roche	30.00
Novartis	25.00
Roche	20.00
Novartis	15.00
Roche	10.00
Novartis	5.00
Roche	4.00
Novartis	3.00
Roche	2.00
Novartis	1.00
Roche	0.50

INVESTMENT TRUSTS - Cont.

Company	Price
Investment Trust	120.00
Investment Trust	110.00
Investment Trust	105.00
Investment Trust	100.00
Investment Trust	95.00
Investment Trust	90.00
Investment Trust	85.00
Investment Trust	80.00
Investment Trust	75.00
Investment Trust	70.00
Investment Trust	65.00
Investment Trust	60.00
Investment Trust	55.00
Investment Trust	50.00
Investment Trust	45.00
Investment Trust	40.00
Investment Trust	35.00
Investment Trust	30.00
Investment Trust	25.00
Investment Trust	20.00
Investment Trust	15.00
Investment Trust	10.00
Investment Trust	5.00
Investment Trust	4.00
Investment Trust	3.00
Investment Trust	2.00
Investment Trust	1.00
Investment Trust	0.50

BREWERS

Company	Price
Guinness	120.00
Heineken	110.00
Beck's	105.00
Carlsberg	100.00
Asahi	95.00
Daewoo	90.00
Sanofi	85.00
Novartis	80.00
Roche	75.00
Novartis	70.00
Roche	65.00
Novartis	60.00
Roche	55.00
Novartis	50.00
Roche	45.00
Novartis	40.00
Roche	35.00
Novartis	30.00
Roche	25.00
Novartis	20.00
Roche	15.00
Novartis	10.00
Roche	5.00
Novartis	4.00
Roche	3.00
Novartis	2.00
Roche	1.00
Novartis	0.50

DISTRIBUTORS

Company	Price
ICI	120.00
Shell	110.00
BP	105.00
Amoco	100.00
Exxon	95.00
Chevron	90.00
Elf	85.00
Agip	80.00
Eni	75.00
Indesit	70.00
Montedison	65.00
Snamprogetti	60.00
Eni	55.00
Indesit	50.00
Montedison	45.00
Snamprogetti	40.00
Eni	35.00
Indesit	30.00
Montedison	25.00
Snamprogetti	20.00
Eni	15.00
Indesit	10.00
Montedison	5.00
Snamprogetti	4.00
Eni	3.00
Indesit	2.00
Montedison	1.00
Snamprogetti	0.50

ENGINEERING

Company	Price
Siemens	120.00
ABB	110.00
Alstom	105.00
General Electric	100.00
Westinghouse	95.00
Hitachi	90.00
Fuji Electric	85.00
Sanofi	80.00
Novartis	75.00
Roche	70.00
Novartis	65.00
Roche	60.00
Novartis	55.00
Roche	50.00
Novartis	45.00
Roche	40.00
Novartis	35.00
Roche	30.00
Novartis	25.00
Roche	20.00
Novartis	15.00
Roche	10.00
Novartis	5.00
Roche	4.00
Novartis	3.00
Roche	2.00
Novartis	1.00
Roche	0.50

BUILDING & CONSTRUCTION

Company	Price
Barclays Bank	125.00
Bank of Scotland	110.00
Bank of Ireland	105.00
Bank of Montreal	100.00
Bank of America	95.00
Bank of England	90.00
Bank of China	85.00
Bank of India	80.00
Bank of Japan	75.00
Bank of Korea	70.00
Bank of Taiwan	65.00
Bank of Thailand	60.00
Bank of Vietnam	55.00
Bank of Indonesia	50.00
Bank of Malaysia	45.00
Bank of Singapore	40.00
Bank of Hong Kong	35.00
Bank of New Zealand	30.00
Bank of Australia	25.00
Bank of South Africa	20.00
Bank of Argentina	15.00
Bank of Brazil	10.00
Bank of Chile	5.00
Bank of Colombia	4.00
Bank of Ecuador	3.00
Bank of Peru	2.00
Bank of Venezuela	1.00

OVERSEAS INDUSTRIALS

Company	Price
ICI	120.00
Shell	110.00
BP	105.00
Amoco	100.00
Exxon	95.00
Chevron	90.00
Elf	85.00
Agip	80.00
Eni	75.00
Indesit	70.00
Montedison	65.00
Snamprogetti	60.00
Eni	55.00
Indesit	50.00
Montedison	45.00
Snamprogetti	40.00
Eni	35.00
Indesit	30.00
Montedison	25.00
Snamprogetti	20.00
Eni	15.00
Indesit	10.00
Montedison	5.00
Snamprogetti	4.00
Eni	3.00
Indesit	2.00
Montedison	1.00
Snamprogetti	0.50

ENGINEERING

Company	Price
Siemens	120.00
ABB	110.00
Alstom	105.00
General Electric	100.00
Westinghouse	95.00
Hitachi	90.00
Fuji Electric	85.00
Sanofi	80.00
Novartis	75.00
Roche	70.00
Novartis	65.00
Roche	60.00
Novartis	55.00
Roche	50.00
Novartis	45.00
Roche	40.00
Novartis	35.00
Roche	30.00
Novartis	25.00
Roche	20.00
Novartis	15.00
Roche	10.00
Novartis	5.00
Roche	4.00
Novartis	3.00
Roche	2.00
Novartis	1.00
Roche	0.50

FOOD MANUFACTURERS

Company	Price
BP	120.00
Shell	110.00
Amoco	105.00
Exxon	100.00
Chevron	95.00
Elf	90.00
Agip	85.00
Eni	80.00
Indesit	75.00
Montedison	70.00
Snamprogetti	65.00
Eni	60.00
Indesit	55.00
Montedison	50.00
Snamprogetti	45.00
Eni	40.00
Indesit	35.00
Montedison	30.00
Snamprogetti	25.00
Eni	20.00
Indesit	15.00
Montedison	10.00
Snamprogetti	5.00
Eni	4.00
Indesit	3.00
Montedison	2.00
Snamprogetti	1.00
Eni	0.50

INVESTMENT TRUSTS

Company	Price
Investment Trust	120.00
Investment Trust	110.00
Investment Trust	105.00
Investment Trust	100.00
Investment Trust	95.00
Investment Trust	90.00
Investment Trust	85.00
Investment Trust	80.00
Investment Trust	75.00
Investment Trust	70.00
Investment Trust	65.00
Investment Trust	60.00
Investment Trust	55.00
Investment Trust	50.00
Investment Trust	45.00
Investment Trust	40.00
Investment Trust	35.00
Investment Trust	30.00
Investment Trust	25.00
Investment Trust	20.00
Investment Trust	15.00
Investment Trust	10.00
Investment Trust	5.00
Investment Trust	4.00
Investment Trust	3.00
Investment Trust	2.00
Investment Trust	1.00
Investment Trust	0.50

Company	Price
Barclays Bank	125.00
Bank of Scotland	110.00
Bank of Ireland	105.00
Bank of Montreal	100.00
Bank of America	95.00
Bank of England	90.00
Bank of China	85.00
Bank of India	80.00
Bank of Japan	75.00
Bank of Korea	70.00
Bank of Taiwan	65.00
Bank of Thailand	60.00
Bank of Vietnam	55.00
Bank of Indonesia	50.00
Bank of Malaysia	45.00
Bank of Singapore	40.00
Bank of Hong Kong	35.00
Bank of New Zealand	30.00
Bank of Australia	25.00
Bank of South Africa	20.00
Bank of Argentina	15.00
Bank of Brazil	10.00
Bank of Chile	5.00
Bank of Colombia	4.00
Bank of Ecuador	3.00
Bank of Peru	2.00
Bank of Venezuela	1.00

OVERSEAS INDUSTRIALS

Company	Price
ICI	120.00
Shell	110.00
BP	105.00
Amoco	100.00
Exxon	95.00
Chevron	90.00
Elf	85.00
Agip	80.00
Eni	75.00
Indesit	70.00
Montedison	65.00
Snamprogetti	60.00
Eni	55.00
Indesit	50.00
Montedison	45.00
Snamprogetti	40.00
Eni	35.00
Indesit	30.00
Montedison	25.00
Snamprogetti	20.00
Eni	15.00
Indesit	10.00
Montedison	5.00
Snamprogetti	4.00
Eni	3.00
Indesit	2.00
Montedison	1.00
Snamprogetti	0.50

ENGINEERING

Company	Price
Siemens	120.00
ABB	110.00
Alstom	105.00
General Electric	100.00
Westinghouse	95.00
Hitachi	90.00
Fuji Electric	85.00
Sanofi	80.00
Novartis	75.00
Roche	70.00
Novartis	65.00

TRANSPORT - Cont

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AUTHORISED UNIT TRUSTS

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AUTHORISED
UNIT TRUSTS

<div>Capital Growth Unit Trust (1997) Capital Growth Fund Ltd (1997) Assets Under Management: £100.0m Units in Issue: 100.0m Unit Price: £1.00 NAV: £1.00 Dividend Yield: 5.0% NAV Yield: 5.0%</div>	<div>Income Fund (1997) Income Fund Ltd (1997) Assets Under Management: £50.0m Units in Issue: 50.0m Unit Price: £0.50 NAV: £0.50 Dividend Yield: 3.0% NAV Yield: 3.0%</div>	<div>Global Fund (1997) Global Fund Ltd (1997) Assets Under Management: £200.0m Units in Issue: 200.0m Unit Price: £2.00 NAV: £2.00 Dividend Yield: 4.0% NAV Yield: 4.0%</div>	<div>Equity Fund (1997) Equity Fund Ltd (1997) Assets Under Management: £150.0m Units in Issue: 150.0m Unit Price: £1.50 NAV: £1.50 Dividend Yield: 6.0% NAV Yield: 6.0%</div>	<div>Property Fund (1997) Property Fund Ltd (1997) Assets Under Management: £80.0m Units in Issue: 80.0m Unit Price: £0.80 NAV: £0.80 Dividend Yield: 2.0% NAV Yield: 2.0%</div>	<div>Art & Antiques Fund (1997) Art & Antiques Fund Ltd (1997) Assets Under Management: £30.0m Units in Issue: 30.0m Unit Price: £0.30 NAV: £0.30 Dividend Yield: 1.0% NAV Yield: 1.0%</div>	<div>Commodities Fund (1997) Commodities Fund Ltd (1997) Assets Under Management: £40.0m Units in Issue: 40.0m Unit Price: £0.40 NAV: £0.40 Dividend Yield: 1.5% NAV Yield: 1.5%</div>	<div>Environmental Fund (1997) Environmental Fund Ltd (1997) Assets Under Management: £60.0m Units in Issue: 60.0m Unit Price: £0.60 NAV: £0.60 Dividend Yield: 2.5% NAV Yield: 2.5%</div>	<div>Healthcare Fund (1997) Healthcare Fund Ltd (1997) Assets Under Management: £70.0m Units in Issue: 70.0m Unit Price: £0.70 NAV: £0.70 Dividend Yield: 3.5% NAV Yield: 3.5%</div>	<div>Technology Fund (1997) Technology Fund Ltd (1997) Assets Under Management: £90.0m Units in Issue: 90.0m Unit Price: £0.90 NAV: £0.90 Dividend Yield: 4.5% NAV Yield: 4.5%</div>	<div>Water & Environmental Fund (1997) Water & Environmental Fund Ltd (1997) Assets Under Management: £110.0m Units in Issue: 110.0m Unit Price: £1.10 NAV: £1.10 Dividend Yield: 5.5% NAV Yield: 5.5%</div>	<div>Infrastructure Fund (1997) Infrastructure Fund Ltd (1997) Assets Under Management: £130.0m Units in Issue: 130.0m Unit Price: £1.30 NAV: £1.30 Dividend Yield: 6.5% NAV Yield: 6.5%</div>	<div>Real Estate Fund (1997) Real Estate Fund Ltd (1997) Assets Under Management: £150.0m Units in Issue: 150.0m Unit Price: £1.50 NAV: £1.50 Dividend Yield: 7.5% NAV Yield: 7.5%</div>	<div>Private Equity Fund (1997) Private Equity Fund Ltd (1997) Assets Under Management: £170.0m Units in Issue: 170.0m Unit Price: £1.70 NAV: £1.70 Dividend Yield: 8.5% NAV Yield: 8.5%</div>	<div>Alternative Assets Fund (1997) Alternative Assets Fund Ltd (1997) Assets Under Management: £190.0m Units in Issue: 190.0m Unit Price: £1.90 NAV: £1.90 Dividend Yield: 9.5% NAV Yield: 9.5%</div>	<div>Global Infrastructure Fund (1997) Global Infrastructure Fund Ltd (1997) Assets Under Management: £210.0m Units in Issue: 210.0m Unit Price: £2.10 NAV: £2.10 Dividend Yield: 10.5% NAV Yield: 10.5%</div>	<div>Global Real Estate Fund (1997) Global Real Estate Fund Ltd (1997) Assets Under Management: £230.0m Units in Issue: 230.0m Unit Price: £2.30 NAV: £2.30 Dividend Yield: 11.5% NAV Yield: 11.5%</div>	<div>Global Private Equity Fund (1997) Global Private Equity Fund Ltd (1997) Assets Under Management: £250.0m Units in Issue: 250.0m Unit Price: £2.50 NAV: £2.50 Dividend Yield: 12.5% NAV Yield: 12.5%</div>	<div>Global Alternative Assets Fund (1997) Global Alternative Assets Fund Ltd (1997) Assets Under Management: £270.0m Units in Issue: 270.0m Unit Price: £2.70 NAV: £2.70 Dividend Yield: 13.5% NAV Yield: 13.5%</div>	<div>Global Infrastructure & Real Estate Fund (1997) Global Infrastructure & Real Estate Fund Ltd (1997) Assets Under Management: £290.0m Units in Issue: 290.0m Unit Price: £2.90 NAV: £2.90 Dividend Yield: 14.5% NAV Yield: 14.5%</div>	<div>Global Private Equity & Alternative Assets Fund (1997) Global Private Equity & Alternative Assets Fund Ltd (1997) Assets Under Management: £310.0m Units in Issue: 310.0m Unit Price: £3.10 NAV: £3.10 Dividend Yield: 15.5% NAV Yield: 15.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity Fund (1997) Global Infrastructure, Real Estate & Private Equity Fund Ltd (1997) Assets Under Management: £330.0m Units in Issue: 330.0m Unit Price: £3.30 NAV: £3.30 Dividend Yield: 16.5% NAV Yield: 16.5%</div>	<div>Global Alternative Assets & Infrastructure Fund (1997) Global Alternative Assets & Infrastructure Fund Ltd (1997) Assets Under Management: £350.0m Units in Issue: 350.0m Unit Price: £3.50 NAV: £3.50 Dividend Yield: 17.5% NAV Yield: 17.5%</div>	<div>Global Infrastructure, Real Estate & Alternative Assets Fund (1997) Global Infrastructure, Real Estate & Alternative Assets Fund Ltd (1997) Assets Under Management: £370.0m Units in Issue: 370.0m Unit Price: £3.70 NAV: £3.70 Dividend Yield: 18.5% NAV Yield: 18.5%</div>	<div>Global Private Equity & Infrastructure Fund (1997) Global Private Equity & Infrastructure Fund Ltd (1997) Assets Under Management: £390.0m Units in Issue: 390.0m Unit Price: £3.90 NAV: £3.90 Dividend Yield: 19.5% NAV Yield: 19.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets Fund Ltd (1997) Assets Under Management: £410.0m Units in Issue: 410.0m Unit Price: £4.10 NAV: £4.10 Dividend Yield: 20.5% NAV Yield: 20.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure Fund Ltd (1997) Assets Under Management: £430.0m Units in Issue: 430.0m Unit Price: £4.30 NAV: £4.30 Dividend Yield: 21.5% NAV Yield: 21.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate Fund Ltd (1997) Assets Under Management: £450.0m Units in Issue: 450.0m Unit Price: £4.50 NAV: £4.50 Dividend Yield: 22.5% NAV Yield: 22.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity Fund Ltd (1997) Assets Under Management: £470.0m Units in Issue: 470.0m Unit Price: £4.70 NAV: £4.70 Dividend Yield: 23.5% NAV Yield: 23.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets Fund Ltd (1997) Assets Under Management: £490.0m Units in Issue: 490.0m Unit Price: £4.90 NAV: £4.90 Dividend Yield: 24.5% NAV Yield: 24.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure Fund Ltd (1997) Assets Under Management: £510.0m Units in Issue: 510.0m Unit Price: £5.10 NAV: £5.10 Dividend Yield: 25.5% NAV Yield: 25.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate Fund Ltd (1997) Assets Under Management: £530.0m Units in Issue: 530.0m Unit Price: £5.30 NAV: £5.30 Dividend Yield: 26.5% NAV Yield: 26.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity Fund Ltd (1997) Assets Under Management: £550.0m Units in Issue: 550.0m Unit Price: £5.50 NAV: £5.50 Dividend Yield: 27.5% NAV Yield: 27.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets Fund Ltd (1997) Assets Under Management: £570.0m Units in Issue: 570.0m Unit Price: £5.70 NAV: £5.70 Dividend Yield: 28.5% NAV Yield: 28.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure Fund Ltd (1997) Assets Under Management: £590.0m Units in Issue: 590.0m Unit Price: £5.90 NAV: £5.90 Dividend Yield: 29.5% NAV Yield: 29.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets 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Management: £630.0m Units in Issue: 630.0m Unit Price: £6.30 NAV: £6.30 Dividend Yield: 31.5% NAV Yield: 31.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets Fund (1997) Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets Fund Ltd (1997) Assets Under Management: £650.0m Units in Issue: 650.0m Unit Price: £6.50 NAV: £6.50 Dividend Yield: 32.5% NAV Yield: 32.5%</div>	<div>Global Infrastructure, Real Estate & Private Equity & Alternative Assets & Infrastructure & Real Estate & Private Equity & Alternative Assets & 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Guide to pricing of Authorised Unit Trusts

Compiled with the assistance of Lauro SS

INITIAL CHARGE: Charge made on sale of units, calculated as a percentage of the net asset value of the unit. This charge is included in the price of the unit.

OFFER PRICE: Also called lower price. The price at which units are offered to investors by the trustee.

NAV PRICE: Also called net asset value. The price at which units are sold back to the trustee.

CANCELLATION PRICE: The net asset value of the unit, less the initial charge, less the cancellation fee. The cancellation fee is a charge made by the trustee on the sale of units back to the trustee.

TIME: The time shown depicts the fund's performance since the last time the unit price was calculated. The time shown is in years and months.

HISTORIC PRICING: The letter F denotes that the unit price is based on the net asset value of the unit at the time of the last calculation. The price shown is the price at which the unit was sold to the investor. The price shown is the price at which the unit was sold to the investor. The price shown is the price at which the unit was sold to the investor.

FORWARD PRICING: The letter F denotes that the unit price is based on the net asset value of the unit at the time of the last calculation. The price shown is the price at which the unit was sold to the investor. The price shown is the price at which the unit was sold to the investor. The price shown is the price at which the unit was sold to the investor.

SCHEME PARTICULARS AND REPORTS: The most recent report and scheme particulars can be obtained free of charge from the trustee.

Other regulatory rules are contained in the fund's prospectus.

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Guide to pricing of Authorised Unit Trusts
Compiled with the assistance of Lauto SS

INITIAL CHARGE: Charge made on sale of units. Used to defray marketing and administrative costs, including commission paid to intermediaries. This charge is included in the price of units.

BID PRICE: Also called redemption price. The price at which units are sold back by investors.

CANCELLATION PRICE: The highest redemption price. The widening spread between the offer and bid prices is determined by a formula laid down by the government. In practice, most unit trust managers take a much

narrower spread. As a result, the bid price is often set above the cancellation price. However, the bid price might be moved to the cancellation price by the managers at any time, usually in circumstances in which there is a large excess of orders of units over buyers.

TIME: The time shown alongside the fund manager's name is the time of the unit trust's valuation point unless another time is indicated by the symbol alongside the individual unit trust name. The symbols are as follows: (P) - 0001 to 0005, 0007, 0008, 0009, 0010, 0011, 0012, 0013, 0014, 0015, 0016, 0017, 0018, 0019, 0020, 0021, 0022, 0023, 0024, 0025, 0026, 0027, 0028, 0029, 0030, 0031, 0032, 0033, 0034, 0035, 0036, 0037, 0038, 0039, 0040, 0041, 0042, 0043, 0044, 0045, 0046, 0047, 0048, 0049, 0050, 0051, 0052, 0053, 0054, 0055, 0056, 0057, 0058, 0059, 0060, 0061, 0062, 0063, 0064, 0065, 0066, 0067, 0068, 0069, 0070, 0071, 0072, 0073, 0074, 0075, 0076, 0077, 0078, 0079, 0080, 0081, 0082, 0083, 0084, 0085, 0086, 0087, 0088, 0089, 0090, 0091, 0092, 0093, 0094, 0095, 0096, 0097, 0098, 0099, 0100, 0101, 0102, 0103, 0104, 0105, 0106, 0107, 0108, 0109, 0110, 0111, 0112, 0113, 0114, 0115, 0116, 0117, 0118, 0119, 0120, 0121, 0122, 0123, 0124, 0125, 0126, 0127, 0128, 0129, 0130, 0131, 0132, 0133, 0134, 0135, 0136, 0137, 0138, 0139, 0140, 0141, 0142, 0143, 0144, 0145, 0146, 0147, 0148, 0149, 0150, 0151, 0152, 0153, 0154, 0155, 0156, 0157, 0158, 0159, 0160, 0161, 0162, 0163, 0164, 0165, 0166, 0167, 0168, 0169, 0170, 0171, 0172, 0173, 0174, 0175, 0176, 0177, 0178, 0179, 0180, 0181, 0182, 0183, 0184, 0185, 0186, 0187, 0188, 0189, 0190, 0191, 0192, 0193, 0194, 0195, 0196, 0197, 0198, 0199, 0200, 0201, 0202, 0203, 0204, 0205, 0206, 0207, 0208, 0209, 0210, 0211, 0212, 0213, 0214, 0215, 0216, 0217, 0218, 0219, 0220, 0221, 0222, 0223, 0224, 0225, 0226, 0227, 0228, 0229, 0230, 0231, 0232, 0233, 0234, 0235, 0236, 0237, 0238, 0239, 0240, 0241, 0242, 0243, 0244, 0245, 0246, 0247, 0248, 0249, 0250, 0251, 0252, 0253, 0254, 0255, 0256, 0257, 0258, 0259, 0260, 0261, 0262, 0263, 0264, 0265, 0266, 0267, 0268, 0269, 0270, 0271, 0272, 0273, 0274, 0275, 0276, 0277, 0278, 0279, 0280, 0281, 0282, 0283, 0284, 0285, 0286, 0287, 0288, 0289, 0290, 0291, 0292, 0293, 0294, 0295, 0296, 0297, 0298, 0299, 0300, 0301, 0302, 0303, 0304, 0305, 0306, 0307, 0308, 0309, 0310, 0311, 0312, 0313, 0314, 0315, 0316, 0317, 0318, 0319, 0320, 0321, 0322, 0323, 0324, 0325, 0326, 0327, 0328, 0329, 0330, 0331, 0332, 0333, 0334, 0335, 0336, 0337, 0338, 0339, 0340, 0341, 0342, 0343, 0344, 0345, 0346, 0347, 0348, 0349, 0350, 0351, 0352, 0353, 0354, 0355, 0356, 0357, 0358, 0359, 0360, 0361, 0362, 0363, 0364, 0365, 0366, 0367, 0368, 0369, 0370, 0371, 0372, 0373, 0374, 0375, 0376, 0377, 0378, 0379, 0380, 0381, 0382, 0383, 0384, 0385, 0386, 0387, 0388, 0389, 0390, 0391, 0392, 0393, 0394, 0395, 0396, 0397, 0398, 0399, 0400, 0401, 0402, 0403, 0404, 0405, 0406, 0407, 0408, 0409, 0410, 0411, 0412, 0413, 0414, 0415, 0416, 0417, 0418, 0419, 0420, 0421, 0422, 0423, 0424, 0425, 0426, 0427, 0428, 0429, 0430, 0431, 0432, 0433, 0434, 0435, 0436, 0437, 0438, 0439, 0440, 0441, 0442, 0443, 0444, 0445, 0446, 0447, 0448, 0449, 0450, 0451, 0452, 0453, 0454, 0455, 0456, 0457, 0458, 0459, 0460, 0461, 0462, 0463, 0464, 0465, 0466, 0467, 0468, 0469, 0470, 0471, 0472, 0473, 0474, 0475, 0476, 0477, 0478, 0479, 0480, 0481, 0482, 0483, 0484, 0485, 0486, 0487, 0488, 0489, 0490, 0491, 0492, 0493, 0494, 0495, 0496, 0497, 0498, 0499, 0500, 0501, 0502, 0503, 0504, 0505, 0506, 0507, 0508, 0509, 0510, 0511, 0512, 0513, 0514, 0515, 0516, 0517, 0518, 0519, 0520, 0521, 0522, 0523, 0524, 0525, 0526, 0527, 0528, 0529, 0530, 0531, 0532, 0533, 0534, 0535, 0536, 0537, 0538, 0539, 0540, 0541, 0542, 0543, 0544, 0545, 0546, 0547, 0548, 0549, 0550, 0551, 0552, 0553, 0554, 0555, 0556, 0557, 0558, 0559, 0560, 0561, 0562, 0563, 0564, 0565, 0566, 0567, 0568, 0569, 0570, 0571, 0572, 0573, 0574, 0575, 0576, 0577, 0578, 0579, 0580, 0581, 0582, 0583, 0584, 0585, 0586, 0587, 0588, 0589, 0590, 0591, 0592, 0593, 0594, 0595, 0596, 0597, 0598, 0599, 0600, 0601, 0602, 0603, 0604, 0605, 0606, 0607, 0608, 0609, 0610, 0611, 0612, 0613, 0614, 0615, 0616, 0617, 0618, 0619, 0620, 0621, 0622, 0623, 0624, 0625, 0626, 0627, 0628, 0629, 0630, 0631, 0632, 0633, 0634, 0635, 0636, 0637, 0638, 0639, 0640, 0641, 0642, 0643, 0644, 0645, 0646, 0647, 0648, 0649, 0650, 0651, 0652, 0653, 0654, 0655, 0656, 0657, 0658, 0659, 0660, 0661, 0662, 0663, 0664, 0665, 0666, 0667, 0668, 0669, 0670, 0671, 0672, 0673, 0674, 0675, 0676, 0677, 0678,

1100 hours; (4) - 1101 to 1400 hours; (5) - 1401 to 1700 hours; (6) - 1701 to midnight. Daily clearing prices are set on the basis of the valuation point; a short period of time may elapse before prices become available.

HISTORIC PRICING: The letter H denotes that the managers will normally deal at the price set on the most recent valuation. The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio reallocation or a switch to a forward pricing basis. The managers most deal at a forward price on request, and may move to forward pricing at any time.

FORWARD PRICING: The letter-F clause that the managers deem at the price to be set at the next valuation. Investors can be given no definite price in advance of the purchase or sale being carried out. The prices appearing in the prospectus are the most current available by the

SCHEME PARTICULARS AND REPORTS: The most recent report and scheme particulars can be obtained free of charge from fund manager.

Other explanatory notes are contained in the last column of the FT Managed Funds Service.

95 Life Assurance and Unit Trust
Regulatory Organisation,
Canter Point,
102 New Oxford Street, London WC1A 1ON
Tel: 0171-376-0444.

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此等文字，皆係古人所遺，其意深遠，非淺學所能盡也。今特錄之，以資參考。

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City	State	Year	Population	Area	Population Density
Albany	NY	1990	20,000	100	200
Albany	NY	2000	22,000	100	220
Albany	NY	2010	24,000	100	240
Albany	NY	2020	26,000	100	260
Albany	NY	2030	28,000	100	280
Albany	NY	2040	30,000	100	300
Albany	NY	2050	32,000	100	320
Albany	NY	2060	34,000	100	340
Albany	NY	2070	36,000	100	360
Albany	NY	2080	38,000	100	380
Albany	NY	2090	40,000	100	400
Albany	NY	2100	42,000	100	420
Albany	NY	2110	44,000	100	440
Albany	NY	2120	46,000	100	460
Albany	NY	2130	48,000	100	480
Albany	NY	2140	50,000	100	500
Albany	NY	2150	52,000	100	520
Albany	NY	2160	54,000	100	540
Albany	NY	2170	56,000	100	560
Albany	NY	2180	58,000	100	580
Albany	NY	2190	60,000	100	600
Albany	NY	2200	62,000	100	620
Albany	NY	2210	64,000	100	640
Albany	NY	2220	66,000	100	660
Albany	NY	2230	68,000	100	680
Albany	NY	2240	70,000	100	700
Albany	NY	2250	72,000	100	720
Albany	NY	2260	74,000	100	740
Albany	NY	2270	76,000	100	760
Albany	NY	2280	78,000	100	780
Albany	NY	2290	80,000	100	800
Albany	NY	2300	82,000	100	820
Albany	NY	2310	84,000	100	840
Albany	NY	2320	86,000	100	860
Albany	NY	2330	88,000	100	880
Albany	NY	2340	90,000	100	900
Albany	NY	2350	92,000	100	920
Albany	NY	2360	94,000	100	940
Albany	NY	2370	96,000	100	960
Albany	NY	2380	98,000	100	980
Albany	NY	2390	100,000	100	1000
Albany	NY	2400	102,000	100	1020
Albany	NY	2410	104,000	100	1040
Albany	NY	2420	106,000	100	1060
Albany	NY	2430	108,000	100	1080
Albany	NY	2440	110,000	100	1100
Albany	NY	2450	112,000	100	1120
Albany	NY	2460	114,000	100	1140
Albany	NY	2470	116,000	100	1160
Albany	NY	2480	118,000	100	1180
Albany	NY	2490	120,000	100	1200
Albany	NY	2500	122,000	100	1220
Albany	NY	2510	124,000	100	1240
Albany	NY	2520	126,000	100	1260
Albany	NY	2530	128,000	100	1280
Albany	NY	2540	130,000	100	1300
Albany	NY	2550	132,000	100	1320
Albany	NY	2560	134,000	100	1340
Albany	NY	2570	136,000	100	1360
Albany	NY	2580	138,000	100	1380
Albany	NY	2590	140,000	100	1400
Albany	NY	2600	142,000	100	1420
Albany	NY	2610	144,000	100	1440
Albany	NY				

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CURRENCIES AND MONEY

MARKETS REPORT

No change from Buba

Traders were yesterday left twiddling their thumbs after the Bundesbank council left all its leading interest rates unchanged, writes Philip Gault.

The Bank's decision, leaving the discount and lombard rates unchanged at 4% per cent and 6 per cent respectively, and the repo rate fixed at 4.85 per cent for a further two weeks, was widely expected.

In the US the dollar weakened after the price of a September of the August purchasing manager's index rose to 74.5, the highest level in six years. This prompted weakness in the bond market, and a fall in the Dow Jones industrial average below 3,900, which hurt the dollar.

The dollar finished in London at DM1.577 from DM1.578. Against the yen it closed at ¥99.668 from ¥100.175.

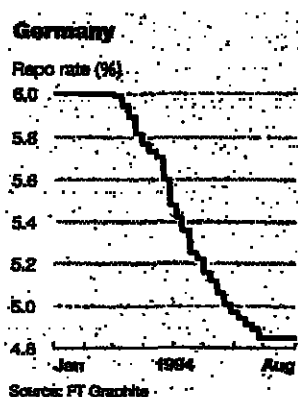
The focus has now shifted to the release today of US payrolls data. The prospect of a long weekend in the US also curbed the market's appetite for taking large positions and this had a dampening effect on volumes.

In Europe the D-Mark was little changed after the Bundesbank's decision to leave rates unchanged. Sterling had a very quiet day, with the trade weighted index unchanged at 79.1.

The response of US markets and the dollar to the purchasing managers' index was a reminder of the bearish psychology which continues to plague the dollar. Some analysts had recently predicted that softer than expected data, which was good for the bond market, might be the catalyst for a dollar revival. Yesterday's movements suggest that reasoning to be premature.

Analysts said the softness of other parts of the report — such as falls in new orders, production and the employment index — should have offset the price index and prevented the dollar going lower.

Earlier the dollar had received some encouragement from Mr Robert Mott, president of the Dallas Federal Reserve bank, who said the long term outlook for the dollar was pretty good. He pre-



■ D-Mark in New York
Sep 1 Last - 1.577
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dicted it would be stronger in 6-12 months time. Analysts said the market's response had been constrained by the release of the monthly employment report, and the start of a long weekend. Some traders are expected to start squaring their positions with Labour day and Rosh Hashanah holidays next week.

The Bank of France left its intervention rate unchanged at 5 per cent, despite the decision earlier in the week by leading French commercial banks to raise interest rates by 25 basis points.

Although the franc was fairly firm, analysts warned that trouble may lie ahead. Economists at Nikko Europe say that unemployment, which fell to 3.07% in July, will be the main issue in the May 1995 presidential election.

They argue that the economy needs further stimulation, but the commitment to reduce the budget deficit removes room for fiscal manoeuvre, while the Bank of France's commitment to a stable Franc/D-Mark rate means French rates are set in relation to German rates.

The Nikko economists predict that there will probably only be one further cut in Germany in late September/early October. "The French economy needs more than just one interest rate cut (but) it is not likely to get it. This is likely to lead to an increased

political risk premium in both the franc and domestic bond yields."

Elsewhere in Europe the lira, having recovered to L1,000, again fell victim to profit-taking. The catalyst was a renewed bout of political squabbling, prompted by comments from Mr Umberto Bossi, the Northern League leader.

Mr Bossi alleged that the prime minister, Mr Silvio Berlusconi, had asked President Scalfaro's permission to call a fresh general election in the hope that the League would lose much of its vote.

Both the president and prime minister denied this claim, but it served as a reminder of the fragile nature of Italy's ruling coalition. The episode also cast doubt on whether the requisite political resolve exists to deal with difficult issues, like curbing state spending.

The Bundesbank's decision to leave its official rates unchanged, and to fix the repo rate at 4.85 per cent for a further two weeks, elicited limited market response. The December Eurocontract contract traded at 94.85 from 94.84.

The decision was fairly widely predicted. Scandinavian currencies have recently been surprisingly firm, but Mr Mui King, global director of forex and money markets at Technical Data in London, predicted that a correction of "several big figures" was due. "This retreat is especially possible because the Bundesbank is at the end of a cycle of cuts and thus German interest rates are likely to firm and have an adverse effect on the Scandinavian bloc."

The Bank of England provided UK money markets with £462m assistance, at established rates, compared to a forecast shortage of £500m. Overnight money traded between 3% per cent and 5 per cent.

IN OTHER CURRENCIES
Sep 1 Last - 1.577
1 Sep 1.578
1 Sep 1.578
1 Sep 1.578
1 Sep 1.578

POUND SPOT FORWARD AGAINST THE POUND

Step 1		Closing mid-point	Change on day	Bid/offer high/low	Day's high/low	One month Rate %/FA	Three months Rate %/FA	One year Rate %/FA	Bank of Eng. Index
Europe									
Austria	(Sch)	17.0888	-0.0088	872 080	17.1000 17.0510	17.0888	0.3 17.0804	0.4 -	115.0
Belgium	(Bfr)	40.9882	-0.0082	715 811	40.9948 40.9800	40.9882	0.3 50.0132	-0.1 46.7832	0.4 118.0
Denmark	(DKr)	8.5772	-0.0072	818 919	8.5802 8.5680	8.5744	0.3 9.0041	-1.1 9.6504	-0.6 116.0
France	(Ffr)	166.822	-0.0022	166 821	166.821 166.821	166.822	0.3 166.822	0.4 166.822	0.4 118.0
Germany	(M)	1.5772	-0.0072	379 310	1.5780 1.5760	1.5772	0.3 1.5772	0.4 1.5772	0.4 118.0
Greece	(Dr)	340.750	-0.0075	379 310	340.750 340.750	340.750	0.3 340.750	0.4 340.750	0.4 118.0
Ireland	(Ir)	1.0127	-0.0027	118 135	1.0154 1.0101	1.0151	0.3 1.0146	-0.7 1.0203	-0.7 104.5
Italy	(L)	2.0000	-0.0000	118 135	2.0000 2.0000	2.0000	0.3 2.0000	0.4 2.0000	0.4 118.0
Luxembourg	(Bfr)	40.9882	-0.0082	715 811	40.9948 40.9800	40.9882	0.3 50.0132	-0.1 46.7832	0.4 118.0
Netherlands	(Gld)	2.2037	-0.0037	382 420	2.2050 2.2025	2.2037	0.3 2.2037	0.4 2.2037	0.4 118.0
Norway	(Nkr)	10.4632	-0.0032	432 420	10.4650 10.4610	10.4632	0.3 10.4647	-0.3 10.8317	0.1 116.0
Portugal	(Esc)	200.484	-0.0048	382 420	200.484 200.484	200.484	0.3 200.484	0.4 200.484	0.4 118.0
Spain	(Pta)	166.636	-0.0036	281 606	166.700 166.572	166.636	0.3 166.636	0.4 166.636	0.4 118.0
Sweden	(Skr)	11.8547	-0.0047	382 420	11.8565 11.8525	11.8547	0.3 11.8547	0.4 11.8547	0.4 118.0
Switzerland	(Sfr)	2.0038	-0.0038	384 405	2.0045 2.0030	2.0038	0.3 2.0037	1.1 2.0014	1.8 121.1
UK	(Ster)	1.0000	-0.0000	384 405	1.0000 1.0000	1.0000	0.3 1.0000	0.4 1.0000	0.4 118.0
USA	(Dlr)	1.5772	-0.0072	719 1719	1.5780 1.5688	1.5771	-0.7 1.5727	-0.4 1.5728	-0.1 118.0
Japan	(Yen)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
South Korea	(Won)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
India	(Rupee)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
China	(Yuan)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Indonesia	(Rupiah)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Malaysia	(Ringgit)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Philippines	(Peso)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Singapore	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Thailand	(Baht)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Taiwan	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
South Africa	(Rand)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Argentina	(Peso)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Brazil	(Real)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Canada	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Mexico	(Peso)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
USA	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Latin America									
Colombia	(Peso)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Venezuela	(Bolívar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Chile	(Peso)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Peru	(Sol)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Ecuador	(Dólar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Uruguay	(Peso)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Paraguay	(Guaraní)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Bolivia	(Bolívar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Costa Rica	(Colón)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Panama	(Balboa)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Nicaragua	(Córdoba)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Honduras	(Lempira)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
El Salvador	(Colón)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Jamaica	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Trinidad and Tobago	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guyana	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Suriname	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guatemala	(Quetzal)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Belize	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Honduras	(Lempira)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
El Salvador	(Colón)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Jamaica	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Trinidad and Tobago	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guyana	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Suriname	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guatemala	(Quetzal)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Belize	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Honduras	(Lempira)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
El Salvador	(Colón)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Jamaica	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Trinidad and Tobago	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guyana	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Suriname	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guatemala	(Quetzal)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Belize	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Honduras	(Lempira)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
El Salvador	(Colón)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Jamaica	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Trinidad and Tobago	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guyana	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Suriname	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guatemala	(Quetzal)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Belize	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Honduras	(Lempira)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
El Salvador	(Colón)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Jamaica	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Trinidad and Tobago	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guyana	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Suriname	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guatemala	(Quetzal)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Belize	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Honduras	(Lempira)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
El Salvador	(Colón)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Jamaica	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Trinidad and Tobago	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guyana	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Suriname	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Guatemala	(Quetzal)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Belize	(Dollar)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
Honduras	(Lempira)	100.175	-0.0017	719 1719	100.175 100.175	100.175	0.3 100.175	0.4 100.175	0.4 118.0
El Salvador	(Colón)								

[illegible]

4 pm close September 1

Have your

Financial Time

NYSE COMPOSITE PRICES

4 pm close September 1

Stock	High	Low	Open	Close	Change
Continued from previous page					
44 7/8 1/2	1.50	1.45	1.48	1.48	0.00
45 1/2 1/2	1.50	1.45	1.48	1.48	0.00
46 1/2 1/2	1.50	1.45	1.48	1.48	0.00
47 1/2 1/2	1.50	1.45	1.48	1.48	0.00
48 1/2 1/2	1.50	1.45	1.48	1.48	0.00
49 1/2 1/2	1.50	1.45	1.48	1.48	0.00
50 1/2 1/2	1.50	1.45	1.48	1.48	0.00
51 1/2 1/2	1.50	1.45	1.48	1.48	0.00
52 1/2 1/2	1.50	1.45	1.48	1.48	0.00
53 1/2 1/2	1.50	1.45	1.48	1.48	0.00
54 1/2 1/2	1.50	1.45	1.48	1.48	0.00
55 1/2 1/2	1.50	1.45	1.48	1.48	0.00
56 1/2 1/2	1.50	1.45	1.48	1.48	0.00
57 1/2 1/2	1.50	1.45	1.48	1.48	0.00
58 1/2 1/2	1.50	1.45	1.48	1.48	0.00
59 1/2 1/2	1.50	1.45	1.48	1.48	0.00
60 1/2 1/2	1.50	1.45	1.48	1.48	0.00
61 1/2 1/2	1.50	1.45	1.48	1.48	0.00
62 1/2 1/2	1.50	1.45	1.48	1.48	0.00
63 1/2 1/2	1.50	1.45	1.48	1.48	0.00
64 1/2 1/2	1.50	1.45	1.48	1.48	0.00
65 1/2 1/2	1.50	1.45	1.48	1.48	0.00
66 1/2 1/2	1.50	1.45	1.48	1.48	0.00
67 1/2 1/2	1.50	1.45	1.48	1.48	0.00
68 1/2 1/2	1.50	1.45	1.48	1.48	0.00
69 1/2 1/2	1.50	1.45	1.48	1.48	0.00
70 1/2 1/2	1.50	1.45	1.48	1.48	0.00
71 1/2 1/2	1.50	1.45	1.48	1.48	0.00
72 1/2 1/2	1.50	1.45	1.48	1.48	0.00
73 1/2 1/2	1.50	1.45	1.48	1.48	0.00
74 1/2 1/2	1.50	1.45	1.48	1.48	0.00
75 1/2 1/2	1.50	1.45	1.48	1.48	0.00
76 1/2 1/2	1.50	1.45	1.48	1.48	0.00
77 1/2 1/2	1.50	1.45	1.48	1.48	0.00
78 1/2 1/2	1.50	1.45	1.48	1.48	0.00
79 1/2 1/2	1.50	1.45	1.48	1.48	0.00
80 1/2 1/2	1.50	1.45	1.48	1.48	0.00
81 1/2 1/2	1.50	1.45	1.48	1.48	0.00
82 1/2 1/2	1.50	1.45	1.48	1.48	0.00
83 1/2 1/2	1.50	1.45	1.48	1.48	0.00
84 1/2 1/2	1.50	1.45	1.48	1.48	0.00
85 1/2 1/2	1.50	1.45	1.48	1.48	0.00
86 1/2 1/2	1.50	1.45	1.48	1.48	0.00
87 1/2 1/2	1.50	1.45	1.48	1.48	0.00
88 1/2 1/2	1.50	1.45	1.48	1.48	0.00
89 1/2 1/2	1.50	1.45	1.48	1.48	0.00
90 1/2 1/2	1.50	1.45	1.48	1.48	0.00
91 1/2 1/2	1.50	1.45	1.48	1.48	0.00
92 1/2 1/2	1.50	1.45	1.48	1.48	0.00
93 1/2 1/2	1.50	1.45	1.48	1.48	0.00
94 1/2 1/2	1.50	1.45	1.48	1.48	0.00
95 1/2 1/2	1.50	1.45	1.48	1.48	0.00
96 1/2 1/2	1.50	1.45	1.48	1.48	0.00
97 1/2 1/2	1.50	1.45	1.48	1.48	0.00
98 1/2 1/2	1.50	1.45	1.48	1.48	0.00
99 1/2 1/2	1.50	1.45	1.48	1.48	0.00
100 1/2 1/2	1.50	1.45	1.48	1.48	0.00

NASDAQ NATIONAL MARKET

4 pm close September 1

Stock	High	Low	Open	Close	Change
Continued from previous page					
101 1/2 1/2	1.50	1.45	1.48	1.48	0.00
102 1/2 1/2	1.50	1.45	1.48	1.48	0.00
103 1/2 1/2	1.50	1.45	1.48	1.48	0.00
104 1/2 1/2	1.50	1.45	1.48	1.48	0.00
105 1/2 1/2	1.50	1.45	1.48	1.48	0.00
106 1/2 1/2	1.50	1.45	1.48	1.48	0.00
107 1/2 1/2	1.50	1.45	1.48	1.48	0.00
108 1/2 1/2	1.50	1.45	1.48	1.48	0.00
109 1/2 1/2	1.50	1.45	1.48	1.48	0.00
110 1/2 1/2	1.50	1.45	1.48	1.48	0.00
111 1/2 1/2	1.50	1.45	1.48	1.48	0.00
112 1/2 1/2	1.50	1.45	1.48	1.48	0.00
113 1/2 1/2	1.50	1.45	1.48	1.48	0.00
114 1/2 1/2	1.50	1.45	1.48	1.48	0.00
115 1/2 1/2	1.50	1.45	1.48	1.48	0.00
116 1/2 1/2	1.50	1.45	1.48	1.48	0.00
117 1/2 1/2	1.50	1.45	1.48	1.48	0.00
118 1/2 1/2	1.50	1.45	1.48	1.48	0.00
119 1/2 1/2	1.50	1.45	1.48	1.48	0.00
120 1/2 1/2	1.50	1.45	1.48	1.48	0.00
121 1/2 1/2	1.50	1.45	1.48	1.48	0.00
122 1/2 1/2	1.50	1.45	1.48	1.48	0.00
123 1/2 1/2	1.50	1.45	1.48	1.48	0.00
124 1/2 1/2	1.50	1.45	1.48	1.48	0.00
125 1/2 1/2	1.50	1.45	1.48	1.48	0.00
126 1/2 1/2	1.50	1.45	1.48	1.48	0.00
127 1/2 1/2	1.50	1.45	1.48	1.48	0.00
128 1/2 1/2	1.50	1.45	1.48	1.48	0.00
129 1/2 1/2	1.50	1.45	1.48	1.48	0.00
130 1/2 1/2	1.50	1.45	1.48	1.48	0.00
131 1/2 1/2	1.50	1.45	1.48	1.48	0.00
132 1/2 1/2	1.50	1.45	1.48	1.48	0.00
133 1/2 1/2	1.50	1.45	1.48	1.48	0.00
134 1/2 1/2	1.50	1.45	1.48	1.48	0.00
135 1/2 1/2	1.50	1.45	1.48	1.48	0.00
136 1/2 1/2	1.50	1.45	1.48	1.48	0.00
137 1/2 1/2	1.50	1.45	1.48	1.48	0.00
138 1/2 1/2	1.50	1.45	1.48	1.48	0.00
139 1/2 1/2	1.50	1.45	1.48	1.48	0.00
140 1/2 1/2	1.50	1.45	1.48	1.48	0.00
141 1/2 1/2	1.50	1.45	1.48	1.48	0.00
142 1/2 1/2	1.50	1.45	1.48	1.48	0.00
143 1/2 1/2	1.50	1.45	1.48	1.48	0.00
144 1/2 1/2	1.50	1.45	1.48	1.48	0.00
145 1/2 1/2	1.50	1.45	1.48	1.48	0.00
146 1/2 1/2	1.50	1.45	1.48	1.48	0.00
147 1/2 1/2	1.50	1.45	1.48	1.48	0.00
148 1/2 1/2	1.50	1.45	1.48	1.48	0.00
149 1/2 1/2	1.50	1.45	1.48	1.48	0.00
150 1/2 1/2	1.50	1.45	1.48	1.48	0.00

AMEX COMPOSITE PRICES

4 pm close September 1

Stock	High	Low	Open	Close	Change
Continued from previous page					
151 1/2 1/2	1.50	1.45	1.48	1.48	0.00
152 1/2 1/2	1.50	1.45	1.48	1.48	0.00
153 1/2 1/2	1.50	1.45	1.48	1.48	0.00
154 1/2 1/2	1.50	1.45	1.48	1.48	0.00
155 1/2 1/2	1.50	1.45	1.48	1.48	0.00
156 1/2 1/2	1.50	1.45	1.48	1.48	0.00
157 1/2 1/2	1.50	1.45	1.48	1.48	0.00
158 1/2 1/2	1.50	1.45	1.48	1.48	0.00
159 1/2 1/2	1.50	1.45	1.48	1.48	0.00
160 1/2 1/2	1.50	1.45	1.48	1.48	0.00
161 1/2 1/2	1.50	1.45	1.48	1.48	0.00
162 1/2 1/2	1.50	1.45	1.48	1.48	0.00
163 1/2 1/2	1.50	1.45	1.48	1.48	0.00
164 1/2 1/2	1.50	1.45	1.48	1.48	0.00
165 1/2 1/2	1.50	1.45	1.48	1.48	0.00
166 1/2 1/2	1.50	1.45	1.48	1.48	0.00
167 1/2 1/2	1.50	1.45	1.48	1.48	0.00
168 1/2 1/2	1.50	1.45	1.48	1.48	0.00
169 1/2 1/2	1.50	1.45	1.48	1.48	0.00
170 1/2 1/2	1.50	1.45	1.48	1.48	0.00
171 1/2 1/2	1.50	1.45	1.48	1.48	0.00
172 1/2 1/2	1.50	1.45	1.48	1.48	0.00
173 1/2 1/2	1.50	1.45	1.48	1.48	0.00
174 1/2 1/2	1.50	1.45	1.48	1.48	0.00
175 1/2 1/2	1.50	1.45	1.48	1.48	0.00
176 1/2 1/2	1.50	1.45	1.48	1.48	0.00
177 1/2 1/2	1.50	1.45	1.48	1.48	0.00
178 1/2 1/2	1.50	1.45	1.48	1.48	0.00
179 1/2 1/2	1.50	1.45	1.48	1.48	0.00
180 1/2 1/2	1.50	1.45	1.48	1.48	0.00
181 1/2 1/2	1.50	1.45	1.48	1.48	0.00
182 1/2 1/2	1.50	1.45	1.48	1.48	0.00
183 1/2 1/2	1.50	1.45	1.48	1.48	0.00
184 1/2 1/2	1.50	1.45	1.48	1.48	0.00
185 1/2 1/2	1.50	1.45	1.48	1.48	0.00
186 1/2 1/2	1.50	1.45	1.48	1.48	0.00
187 1/2 1/2	1.50	1.45	1.48	1.48	0.00
188 1/2 1/2	1.50	1.45	1.48	1.48	0.00
189 1/2 1/2	1.50	1.45	1.48	1.48	0.00
190 1/2 1/2	1.50	1.45	1.48	1.48	0.00

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AMERICA

Earnings fears hit technology stocks hard

Wall Street

US share prices retreated yesterday morning when the outlook for computer stocks became clouded, writes Frank McGarry in New York.

By 1 pm the Dow Jones Industrial Average was 10.69 lower at 3,902.73, while the Standard & Poor's 500 was down 2.21 at 473.28. The set-back was broadly-based, with Big Board declines leading advances by a two-to-one margin. NYSE volume was moderate, with 171m shares traded by early afternoon.

In the secondary market, the American SE composite was

off 1.01 at 453.33. The Nasdaq

composite, with its heavy concentration of technology

stocks, suffered more, dropping

5.33 to 780.30.

The day's economic news

had an indirect impact on

share prices. The National

Association of Purchasing

Management revealed that the

prices-paid component of its

August survey had risen to its

highest level in six years.

With investors on edge

ahead of today's employment

data, the NAPM report was

more than enough to encourage

some profit-taking in cyclical

stocks which led the market's

recent rally. Caterpillar, a

Loblaw back 3 1/4% to 114 1/4

and International Paper 3 1/4% to 7 3/4.

But the most important

cause of yesterday's weakness

was a sudden loss of confidence

in the health of the computer

industry. The broad sell-off

appeared to have been triggered

by AST Research which, a day earlier, had

warned that it would post a

loss this quarter. The Nasdaq-

listed stock plunged 4 1/4% to

\$13 1/4 as the news prompted at

least two Wall Street securities

houses to downgrade the issue.

But the impact of the

announcement was felt by a

wide range of technology

stocks. Among software developers,

Microsoft lost 1 1/4% to

\$59 1/4. Among the chip suppliers,

Motorola dropped 1 1/4% to

\$52 1/4. National Semiconductor

lost 1 1/4% to \$27 1/4. Advanced

Micro Devices fell 1 1/4% to

\$27 1/4. The big computer manufacturers

were not spared, either. Compaq

was marked down 1 1/4% to

\$35 1/4 with reports that it was

trimming orders from suppliers

adding fuel to the fire. Apple

dropped 3/4% to \$37 1/4 and IBM

slipped 3/4% to \$77 1/4.

Some retailing stocks also

came under pressure. The Gap

plunged 3 1/4% to \$39 1/4 after

revealing that revenues from

stores opened at least a year

had fallen by 5 per cent last

month. Dayton Hudson lost

3/4% to \$22 1/4 when its same-

store sales came in under

expectations.

Elsewhere, Fingerhut made a

rare appearance on the NYSE's

most active list in volume of

3.1m shares. The stock plunged

1 1/4 per cent, or 4 1/4% to \$29 1/4

as the mail-order merchandiser

warned that its third-quarter

profits would suffer as a result

of start-up costs relating to a

television shopping service.

Canada

Toronto's

TSE 300 composite index fell

21.21 to 4,328.29 in volume of

31.49m shares. Declines out-

paced advances by 281 to 229

with 291 issues flat.

Cott Corp surged 3 1/4% to

C\$17 on its details that a Lob-

law back 3 1/4% to 114 1/4 and

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Brazil rises 2.1 per cent

São Paulo rose 2.1 per cent in

moderate trade as prices

rebounded from early losses

after investors returned to the

market on news that the central

bank had taken fresh steps

to control liquidity in the

banking system.

The Bovespa index gained

1,038 at 54,333 at 1300 local time

in turnover of R\$214.3m

(R\$42.1m).

Prices were also bolstered by

two new opinion polls showing

Mr Fernando Henrique Car-

dos, the former economy min-

ister, advancing further in the

presidential race which

improved his chances of win-

ning the election outright in

the first round of voting on

October 3.

Mexico

Shares rose in early trade in a

technical rebound after five

days of losses. The IPC index

put on 18.33 to 2,721.06 in the

first hour of trading, as analysts

suggested that wary investors

were waiting for the

victorious presidential candi-

date, Mr Ernesto Zedillo, to

give an indication of the com-

position of the new cabinet.

Telmex L shares, available to

foreigners, gained 1.5 per cent

while the ADRI rose 3/4% to

\$63 1/4 in New York.

S Africa optimistic on gold

A growing mood of optimism

over the bullion price outlook

took gold and mining-related

shares higher in Johannesburg.

The gold index rose 4 1/4%

or 1.9 per cent to 2,331, the

overall index added 3 1/4% to

5,668, and industrials put on

11 to 6,545.

De Beers recovered part of

recent loss ground to add

R1.75 to R105. Gemcor made

40 cents to R13.90, Lombard

added

33.25.

30 cents to R10 and Minorco

rose R1 to R117.

Iscor improved 11 cents to

R4.25 on improved annual

results and a bullish outlook.

Bankland made gains after

news of its merger with Trans-

Natal, adding R1.75 to R25.75.

Lorraine gained 75 cents to

R22. Vaal Reef rose R18 to

R447 and Kloof added R1 to

R88. Sasol gained 75 cents to

R33.25.

EUROPE

Corporate results lose impact as bourses follow Wall Street

The intermittent and very

recent ability of bourses to

major on corporate perfor-

mance was shelved again yester-

day as the dollar weakened

and Wall Street lost ground,

writes Our Markets Staff.

PARIS ended little changed

in domestic bond markets, but

Wall Street's performance dis-

heartened equity traders in the

afternoon and the CAC 40

index ended 34.17, or 1.55 per

cent lower at 2,094.91 in turn-

over of about FF2.5bn.

There was some consolation

in company results. Elf Aquit-

aine produced lower profits

but said that good results from

chemicals had offset weak oil

prices. The shares fell FF5.40

to FF410.80 while its Sanofi,

pharmaceutical, performed

subsidary lost only FF2.20

at FF957 when it said that analysts'

forecasts for 1994 were

achievable.

Meanwhile, Bouygues fell

sharply after the construction

group told analysts that it was

still suffering losses from its

property interests. The shares

closed FF2.28 down at FF280.

Banks fell after broad gains

on Wednesday. CFP lost FF3.30

or 3.8 per cent at FF287 and

BNP FF4.20, or 3.3 per cent at

FF242.5. Alcatel Alsthom

extended Wednesday's fall on

renewed allegations of corporate

misdeeds, ending FF1.19

lower at FF580. But Alcatel

was not spared, either. Compaq

was marked down 1 1/4% to

\$35 1/4 with reports that it was

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AEROSPACE

Friday, September 2 1994

Airlines: slow flight
back into profit
Page 4Defence: cold comfort for
industry after the cold war
Page 2

The mood two years ago at the Farnborough Air Show was one of profound gloom. The aerospace industry was in the midst of its worst post-war cyclical downturn hit by the combined and prolonged effects of the slump in civil aviation and cuts in defence spending following the end of the cold war.

Senior officials of leading aerospace companies were trying to put on a brave face inside their corporate chalets at the show. "I'll offer a case of the best champagne to the first person who walks in with a real order," said one executive of a large European aircraft manufacturing company.

Next week, as the world aerospace industry gathers again en masse at Farnborough, the atmosphere is likely to be much improved. Not that the industry is finally out of the woods, but at last it is seeing some light on the other side of the dark valley.

During the past six months, there have been tangible signs of recovery in the airline industry. After four years of record losses, world airlines expect to return to profit this year as passenger and cargo traffic continues to pick up strongly. In the first half of the year, the 224 airline members of the International Air Transport Association (IATA) saw their overall traffic grow by 9.3 per cent compared with 7.2 per cent for the whole of last year.

Although this improvement has yet to translate into a new sustained wave of orders for aircraft manufacturers from more financially stable airline customers, the market has begun to stir. "Deferrals and cancellations of orders are now slowing down," said a senior official of the European Airbus consortium. "Last year they were the rule: today they are becoming the exception."

Singapore Airlines, one of the most profitable carriers, sent a strong signal to the market in June when it placed one of the biggest new aircraft orders on record for 52 wide-body airliners worth \$10.5bn. The airline said the deal reflected its confidence in the long-term health of the aviation industry.



Boeing's new 777 widebody airliner will enter service next year and will challenge the Airbus A340. Airbus and Boeing are battling for leadership in the growing widebody aircraft market.



Manufacturers prepare for take-off

Collaboration, partnerships and joint ventures have all become the rule in the civil sector, writes Paul Betts, Aerospace Correspondent

This was in sharp contrast to what its chairman wrote in June 1993 in his annual statement when he noted that "aviation analysts surveying the carnage in the industry are sunk in despair". In his annual statement this year, he wrote: "Analysts may be inclined to infer that the downward slide in the industry remains intact; their melancholy may be misplaced."

This cautious revival of optimism has also followed two years of a continuing shake-up in the civil and defence sides of the business. Defence contractors have had to adapt to what appears to be a lasting reduction in government military budgets forcing them to accelerate the trend towards greater consolidation and rationalisation in the industry.

The US has taken the lead with a significant wave of disposals of their defence activities by some large industrial conglomerates to other groups that have decided to increase

their presence in a shrinking market. European competitors have been slower to adapt.

But, in the past two years, there has been a growing trend of transnational mergers and consolidations in Europe. These include negotiations between British Aerospace and Matra of France to merge their missile activities; the planned acquisition by a joint venture between Matra and the UK General Electric Company of BAE's space systems division; advanced negotiations between Aérospatiale of France and Deutsche Aerospace to combine their missile and space operations in joint companies, similar to the merger of their helicopter activities into Eurocopter.

Collaboration, partnerships and joint ventures have all become the rule of the game in

the civil sector reflecting the global nature of the aerospace market as well as the rising costs of developing new products and technologies and the increasingly long investment pay-back lead times. All aerospace manufacturers from air-

chasing too few orders. After failing in its efforts to merge its loss-making regional jet activities with Taiwan Aerospace, BAE is now in talks with the Dutch manufacturer Fokker which was taken over last year by Deutsche Aerospace. It

operate on the development of new programmes. Boeing and Airbus have also been discussing during the past two years joint collaboration on a future very large aircraft with 600-800 seats.

However, these talks have been marred by suspicion with each side worried that the other is seeking to establish a lead in the future development of a super jumbo airliner. As a result, both Boeing and Airbus have continued to pursue separate studies to develop on their own a very large transport which they believe the market will need by the beginning of the next century.

Continuing trade frictions on government direct and indirect supports for civil aircraft programmes have not helped collaboration efforts between Boeing and the Airbus partner

In this survey

Large commercial aircraft, page 2; Aero engines, page 3; Airlines, page 4; Military aircraft, page 5; Missiles and avionics, page 6; Super jumbo and SST-2, page 7; Spaceflight, page 8; New materials, page 9; World markets, US, Japan, Russia, China, Europe, Asia-Pacific, pages 10-14.

frame producers to aero engine makers and components suppliers now agree that co-operation is the only way forward.

The regional jet and commuter turbopropeller market seems set for significant consolidation in the coming year as manufacturers desperately seek to rationalise a sector where too many products are

companies. Although the trade dispute has abated following the 1992 agreement between the US and the European Union on aircraft subsidies, both sides are still anxious to secure new commitments on this controversial issue. The US wants even tougher restrictions on direct subsidies to Airbus, while Europe is insisting on stricter controls on indirect government support from Washington to its aerospace industry.

All three leading aircraft manufacturers are continuing to forecast strong demand for new aircraft over the next 20 years. Boeing, the world's biggest manufacturer, expects \$96bn worth of new airliners to be sold in this period to meet the growth in air travel and the need to replace older jets.

For the manufacturers, the biggest prize in the short to medium term remains the Asia-Pacific market which has continued to grow much faster

than other regions with strong demand not only for civil aircraft but also for military equipment. The Chinese civil aviation market in particular has been growing at breakneck speed. In contrast, the industry's earlier hopes of seeing the former Soviet Union emerge as a significant new market opportunity for western manufacturers have so far failed to materialise.

But the airline industry in general is in no hurry right now to start ordering new aircraft with the same frenzy as it did in the late 1980s. Airlines are still struggling to restore their balance sheets, badly dented by several consecutive years of losses and fare wars that have undermined their passenger fare yields. In the face of what are likely to be lasting pressures on yields, airlines have sought to improve their financial performance by extensive cost-cutting to improve overall productivity.

One of the most interesting recent trends in the airline industry's cost-cutting drive has been the growth in employee ownership in airlines. The US has taken the lead and already employees own 26 per cent of Northwest Airlines, 45 per cent of Trans World Airlines and 55 per cent of United Airlines. Negotiations are taking place between management and employees at USAir over restructuring proposals also involving an exchange of equity to employees for labour concessions. This trend now seems set to spread to other countries. Already British Airways pilots are interested in increasing their stake in their airline.

Because airlines are preoccupied with holding down costs, manufacturers have had to shift their traditional emphasis from pure product research and development to improving their manufacturing processes. This will enable them to produce airliners more cost efficiently thus ensuring a return on investment from airline customers purchasing aircraft with lower operating and acquisition costs. "The issue today is not so much what you build but how you build it," explained an Airbus executive.


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AEROSPACE 2

Paul Betts says the worst may be over for the beleaguered commercial aircraft industry

Preparing for tomorrow today

Some signs have finally emerged that the worst is possibly over for the beleaguered commercial aircraft industry. Singapore Airlines this summer placed one of the world's biggest aircraft orders for 52 US Boeing and European Airbus widebody airliners worth \$10.3bn. Dr Cheong Chong Keng, the airline's managing director, described it as "an expression of faith in the long-term health of the aviation industry". A few months earlier, Saudi Arabia also announced a jumbo order for about \$6bn worth of Boeing and McDonnell Douglas airliners.

Although these large deals, once commonplace in the late 1980s before the industry was plunged into its worst recession during the last four years, are still the exception rather than the rule, all three main commercial aircraft manufacturers - Boeing, Airbus and McDonnell Douglas - are beginning to see some light at the end of the tunnel.

"Last year we all suffered big order cancellations and deferrals from airlines. At least this year cancellations and deferrals have petered out," says Jean Pierson, the Airbus chief executive.

"The airline industry has had a hell of a time but I expect the airline market to bottom out," says John McDonnell, chairman of McDonnell Douglas, the most vulnerable of the three big manufacturers to the industry's difficulties. "I do see signs that we are coming out of the depression. I've been through three cycles. People have speculated that we would go out of the commercial aircraft business. It hasn't happened yet and it won't hap-

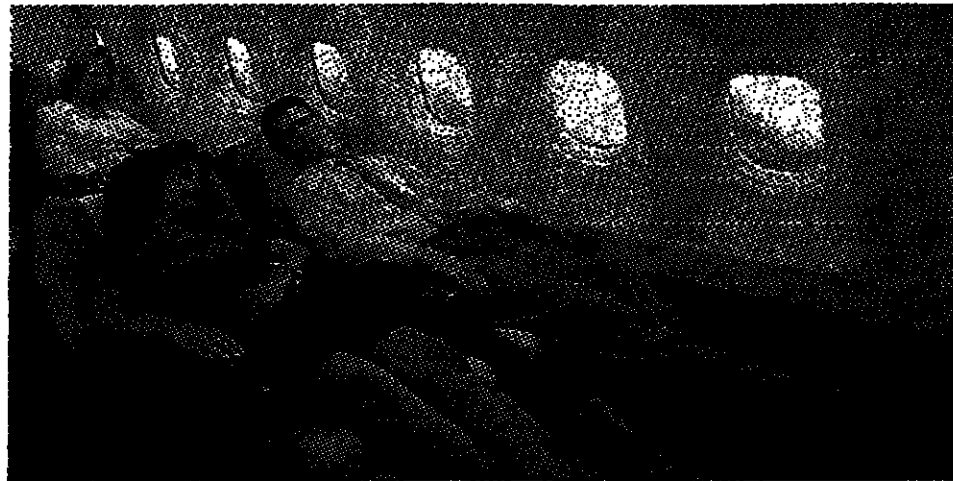
pen in this cycle," he adds.

And Boeing, the world's biggest manufacturer of commercial jets, is still forecasting demand for new airliners worth \$980bn in the next 20 years to meet the growth in air travel and the need to replace older jets. In its latest civil aircraft market outlook, Boeing says that \$781bn worth of new aircraft will be needed to accommodate future air traffic growth and \$249bn to replace older aircraft.

But the four-year long recession has left deep scars and forced aircraft manufacturers to adapt rapidly to a fundamental structural change in the market. Air traffic, a traditional barometer of economic activity, is now recovering but the passenger yields of airlines continue to remain under pressure because of low fares. Many airlines as a result continue to be burdened by financial losses and debts significantly reducing their ability to acquire new aircraft.

"It is becoming more and more evident that revenue, rather than traffic, is becoming the key to airline profitability," says Adam Brown, head of strategic planning at Airbus. Like other industry experts, Mr Brown believes low fares are here to stay and airlines will have to rely increasingly for their profits on cost reductions and operational efficiencies. In turn, they will seek to fill their fleets with aircraft with both lower operating and acquisition costs.

These financial pressures coupled with the industry's increasing concentration has led to a further intensification of competition in the commercial aircraft market. As Boeing puts it: "There are only 600 air-



Spacious atmosphere: the A340 offers first-class passengers genuine widebody comfort

lines in the world. Only 125 of these buy new airplanes. And the 20 largest airlines buy 60 per cent of all new commercial airplanes. In such a concentrated market, you can't afford to miss a single strategic sale."

To respond to these new challenges, aircraft manufacturing has been forced to evolve from a business driven purely by product, research and development to one where the manufacturing process will make the difference between one airline builder and its rivals. "It is no longer so much what you build but how you build that will give you the edge over the competition," explains a senior Airbus executive.

"We are all having to adapt to this new competitive environment," says Claude Turraz, head of the commercial aircraft division of Aérospatiale, the French partner in the Airbus consortium. "Boeing is now cutting its production

costs by 25 per cent; either they want to kill us because they think Airbus can't match such cuts, or they are adapting to the structural change in the airline industry with low fares; or they are trying to do both," he adds.

At the roll-out this spring of its latest airliner - the 400-seat 777 twin-engine widebody - Ron Woodard, the head of the US company's commercial aircraft operations, said Boeing was committed to drive down costs and the time to build an aircraft "to make sure we remain the world's most competitive manufacturer of commercial jets".

Boeing has already reduced the order-to-delivery time of its widebody aircraft such as the 747 and the 767 from as high as 18 months a few years ago to around 10.5 months and wants to bring it down even further to eight months. It eventually hopes to achieve the same target for the 777, the latest mem-

ber of its aircraft family.

Boeing has already reduced the production cycle time for its narrowbody aircraft, including the 737 and the 757, to nine months and is planning to bring it down to six months by 1996.

The way Boeing has developed the 777 is another exam-

Manufacturers are beginning to see light at the end of the tunnel

ple of how manufacturers have adapted their operations to the changes that have taken place in the civil aircraft business. Boeing describes the 777 as a "market-driven" airliner. In the past, the manufacturer felt it knew what was best for its airline customers. But with the 777, Boeing has encouraged airlines, suppliers and subcontractors to participate actively in the design and planning of



Test flight: Boeing pilots familiarising themselves with the 777 electronics in a specially-equipped laboratory

the new airliner.

"Not that we did not listen to our customers in the past, but the biggest lesson we learnt was that we often listened to them late in the programme," explains a senior Boeing executive. At all cost, Boeing wanted to avoid the mistakes made five years ago on the development of the 747-400, the newest version of its 747 jumbo. After failing to listen properly to its customers, Boeing was forced to delay delivery for several months to initial customers because of teething problems and design changes demanded by airlines. This time, Boeing wanted to make sure it had what it calls a "service ready" airliner from the first 777 delivery.

The change in Boeing's manufacturing approach reflects two important evolutions in the market. The first was the need to adapt to the new circumstances facing airlines hit by the prolonged slump in civil

aviation. The second, and perhaps even more important factor, was the emergence of Airbus as Boeing's principal long-term challenger.

The European consortium, which has steadily built market share during the past 20 years by launching advanced new aircraft programmes and developing a broad family of airliners, has been making serious inroads into some of Boeing's traditional customers including in its domestic US market.

With nearly 30 per cent of the world market, Airbus has now overtaken McDonnell Douglas in the industry's number two slot behind Boeing. The US company's Douglas commercial aircraft division has been given a big boost by Saudi Arabia's decision to award a large slice of its new \$8bn order to the Long Beach, California, group. But Douglas continues to be handicapped by its limited product range focused on two niche markets with its MD11 three-engine widebody airliner and its MD-80, MD-90 and the planned MD-95 narrowbody twin-engine airliners all derived from the original DC-9.

Douglas has not abandoned the idea of forging an international alliance with foreign partners acquiring up to 49 per cent of the Long Beach concern. A similar scheme with Taiwan collapsed two years ago. But in the absence of establishing a strong international alliance, many in the industry expect Douglas to find it increasingly hard to compete with just two product lines. "This is simply not a niche business. You need a broad family of aircraft to compete," explains one of Douglas's main rivals.

In contrast, Airbus has embraced the "family concept" with its A320, A319 and A321 narrowbody airliners, its A300 and A310 widebodies, and its latest widebodies including the A330 twin-engine airliner and its sister aircraft, the four-engine very long range A340.

From the beginning, Airbus has sought to leapfrog Boeing with its products by introducing new technological concepts to commercial jets including fly-by-wire electronic controls. And with the A330 and A340 and plans to develop the A32X, a 500 to 600-seater jumbo, Airbus has also increasingly challenged Boeing's dominance of the large aircraft market.

The reaction at Boeing has been violent. As Mr Woodard put it in Boeing's staff magazine: "We decided to prepare for the future today, while we're number one because number two is unthinkable." Boeing's cost-cutting drive has

involved 28,000 job reductions in 1988 and 1994. The US company has stepped up the widespread application of new computer and automated manufacturing techniques. It has introduced new organisational structures to improve internal working relations and practices.

All this has now put pressure on Airbus to accelerate its own internal change to respond to the new competitive challenge from Boeing. Simply put, the commercial success of Airbus, whose sales topped \$8bn last year and are expected to reach the same level this year, is in danger of being undermined by the group's own complex corporate structure and complex work-sharing production system based in its four partner countries - France, Germany, the UK and Spain.

But all four Airbus partners now recognise that the challenge for Airbus is to transform what was initially conceived as a job and wealth creation consortium to compete against the dominance of the US manufacturers into an independent company, mature enough to rationalise and restructure, take hard political and social decisions, and stand on its own two corporate feet.

Airbus says it is confident it can meet Boeing's challenge. It too has cut back on excessive staff with its four partners all launching extensive restructuring. It is attempting to maximise the big investments made during the past 20 years in automation and computer-aided manufacturing. It has also sought to simplify and streamline the consortium's complicated four-nation manufacturing and assembly processes.

Mr Pierson, the Airbus chief executive, has set production targets for Airbus airliners similar to those set by its rival Boeing. "For narrowbody aircraft we are also aiming at an order-to-delivery target of six months in 1996. Today it is 12 months, next year it will go down to nine," he says. For widebody aircraft like the A300, A310, A330 and A340, Airbus has already reduced production cycle times from 15 months to 12.5 months and plans to go down to nine months by 1996.

But the task remains a daunting one for Airbus. The European consortium has started transforming itself, but the process is a slow and politically difficult one. Unless it steps up the tempo, it will find it hard to keep up with the pace being set by Boeing. As Philip Condit, Boeing's president, has put it: "The race will go to whoever is fastest."

Defence contractors

Cold comfort after cold war

Norman Augustine, the chairman and chief executive of Martin Marietta, has been negotiating some tough deals with the Pentagon recently. When the company agreed to acquire General Dynamics' Space Systems division in May, the Department of Defence agreed to pay for some of the rationalisation costs, and to allow Martin Marietta to keep half of the resulting savings.

Such deals are likely to become more common if the Pentagon has its way, but it does not herald a sudden outbreak of altruism in Washington. The Department of Defence thinks that if the defence industry consolidates into fewer larger manufacturers it will save money. In the case of General Dynamics Space business, for example, paying \$30m in restructuring charges may save \$500m on the cost of launch vehicles over the next 10 years.

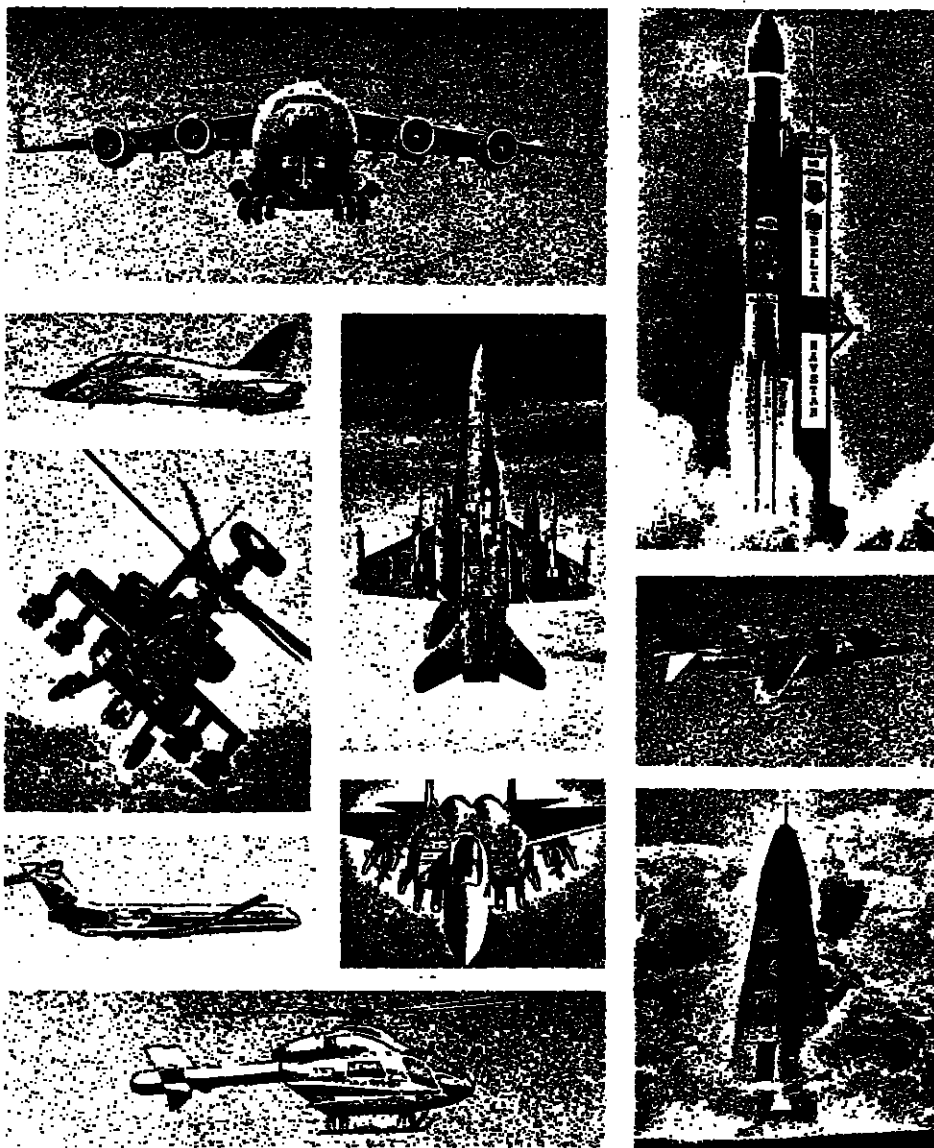
If incentives from the Department of Defence are the carrots to encourage industry

mergers and rationalisation, there are plenty of sticks, too. As US defence spending has been cut in the wake of the Reagan arms build-up and the end of the cold war, weapons procurement has been by far the worst hit section of the budget. Total defence expenditure is down by a third in real terms in the past decade, but weapons procurement has fallen by two-thirds. Since that is what puts bread into the mouth of defence companies, some people have gone hungry.

The industry has had to respond rapidly to this rising pressure. Since 1990, employment in the US defence industry has fallen from 1.2m to 800,000. There has also been a string of deals with companies trading businesses. Yet, so far there has been no rout, and nor has the game of musical chairs turned nasty, despite the steadily reducing number of seats.

The first to pull out were the

Continued on page 3



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Paul Betts

Quest for

old comfort

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Paul Betts discusses the manufacture of aero engines

Quest for ever more power

The development of the most powerful commercial jet engines ever built has continued to dominate the efforts of the world's leading aero-engine manufacturers.

The stakes are huge. Between them, the big three aero-engine makers are spending around \$4bn to develop these new power plants which can deliver more than 100,000lb of thrust. The Trent being developed by Rolls-Royce of the UK has already been run at 106,000lb of thrust. General Electric of the US has tested its new GE90 at an even higher rating of 110,000lb, while the other big US manufacturer, Pratt & Whitney, has also run its more powerful derivative of the PW4000 at more than 100,000lb of thrust.

When Rolls-Royce first unveiled the Trent programme at the Farnborough Air Show back in 1988, Sir Frank Whittle, the father of the jet engine, could hardly disguise his amazement at the extraordinary progress made in engine technology since the development of his first engine with only 490lb of thrust.

"The most powerful engine I designed had a thrust of 250lb. I would have said something like 10,000lb was as far as we were likely to go. If we wanted

more power for a particular aeroplane, we'd just have had more engines than, say, two of these enormous, powerful jobs," he said.

Throughout the history of the commercial aerospace industry, aircraft have been getting bigger and heavier, and as Russ Sparks, the GE90 programme manager notes "the heavier versions of aircraft have traditionally sold best".

This trend is showing no sign of abating. Aero-engine makers now expect that by far the largest portion of all civil aerospace business in the future - around 60 per cent by value - will be in the large, widebody aircraft sector requiring a new generation of heavy thrust engines.

At present there is only limited market application for the new big power plants under development with the new Boeing 777 wide-body twin-engine airliner, which made its flight debut in June with Pratt & Whitney engines, the prime contender. At the same time, there is no demand at this stage for engines with thrusts of more than 100,000lb since Boeing requires thrust ratings of 76,000lb and 84,000lb for the first two versions of its 312 to 400-seat 777s.

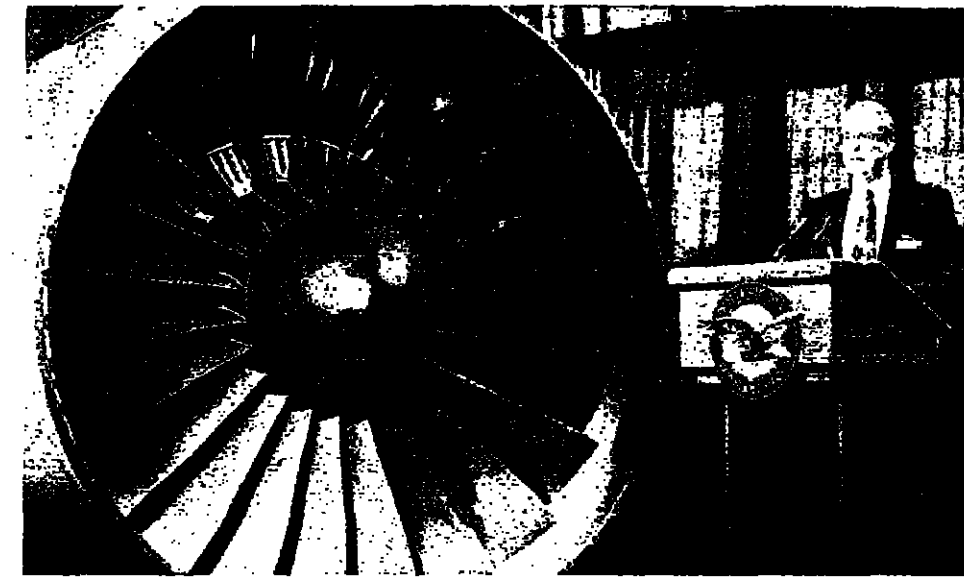
But the engine makers are



Rolls-Royce Trent 900: run at 106,000lb of thrust

already anticipating demand for heavier versions of the aircraft as well as development of other new large airliners. All big three manufacturers are thus anxious to show airline customers that their new large commercial engine programmes can meet potential

demand for bigger and heavier derivatives of the 777 as well as super jumbo 600 to 800-seat airliners under study. However, the timing of these ambitious and costly programmes could not have come at a more difficult moment. The battle to power the "big



Boeing 777 engine dwarfs Jay Pardo, of the US Federal Aviation Administration, at a Pratt & Whitney meeting

twins", as it has become popularly known, has coincided with the worst recession in the highly cyclical commercial aerospace industry coupled with the decline in military business following the reduction of government defence budgets in the wake of the end of the cold war.

The industry has been caught in the classic pincers with research and development costs running very high at a time when cash flow has been inhibited by poor trading conditions, which have hit not only new engine sales but activity in spares, a traditional large source of profit for engine makers. Moreover, the

decline in defence spending, which for the first time has come simultaneously with the downturn in the civil side, has had severe implications on the government funded part of company research and development budgets.

This has forced aero-engine companies to pursue sweeping restructures including heavy job cuts and plant closures. Rolls-Royce, for example, closed three plants last year and is closing three more this year to match the cost-cutting of its US rivals. The UK company has also sought to expand its activities in the industrial power business to reduce its reliance on aero-engines. How-

ever, unlike its US competitors, which are part of big diversified industrial groups, the UK company still remains heavily dependent on aerospace.

The competitive pressures and heavy costs of developing new engines have also stepped up the pace of consolidation and collaboration in the industry. All the three big aero-engine makers have forged partnerships with other international companies in the heavy thrust engine market.

Risk and revenue sharing partners from Japan, Germany, France, Spain, South Africa as well as the UK have taken almost 30 per cent of Rolls-Royce's Trent programme. The

GE90 has reinforced the collaboration between the US manufacturer and Snecma, the French state-controlled aero-engine group. Through their CFM International partnership, GE and Snecma have formed what many regard as a model of international collaboration which has enabled them to take a leading position in supplying engines for narrow-body airliners such as the Airbus A320 as well as for the new long-range four-engine A340.

Pratt & Whitney for its part has entered into a strategic partnership with MTU, the aero-engine subsidiary of Deutsche Aerospace, and is the principal partner with Rolls-Royce in the International Aero Engine consortium which develops the V2500 engines in competition against the GE-Snecma CFM International partnership.

Collaboration is intensifying at every level of the market and not just at the top end. This has seen the successful launch of the joint aero-engine venture between Rolls-Royce and BMW, the German car group, which is developing the BR700 series of engines to power new long-range business jets as well as future regional jet aircraft. Deutsche Aerospace has now also renewed approaches to its German rival to suggest co-operation.

The industry now believes it has probably seen the worst of the current prolonged recessionary cycle with a recovery in orders starting to pick up around 1996.

Cold comfort

Continued from page 2

predominantly non-defence companies who decided to leave the field to professional soldiers. So IBM, Ford and General Electric have sold their defence interests to the likes of Loral and Martin Marietta. The other big seller has been Bill Anders, the astronaut who was chairman of General Dynamics between 1991 and 1993. He sold his F-16 fighter plant to aerospace company Lockheed, his missile business to missile specialists Hughes Aircraft, his space launch business to Martin Marietta, and his non-military aircraft business to Textron.

Other deals will follow and Dan Tellup, chairman of Lockheed, thinks that the US may end up with two combat aircraft manufacturers, two electronics giants and two missile companies. It is already down to one tank manufacturer, one submarine yard and one surface warship maker. Some systems are too expensive for even the US to afford. Strategic bombers may have come to the end of the line with the \$350m-a-

time B2, unless cheaper production methods are found.

Yet the larger companies, such as Lockheed, Martin Marietta, Raytheon and McDonnell Douglas, have sufficient backlogs of orders to be relaxed in the short term. "We have to be opportunistic," says Dan Tellup, "because it is never completely clear where the opportunities will arise." These companies have also become strongly cash generative as a result of the job cuts, and perhaps their biggest immediate fear is that their rising stock market values may attract cash-hungry predators. Smaller firms with weaker finances cannot be so relaxed, however. Those whose programmes are drawing to a close, such as Northrop and Grumman, may be forced into merger to spread the pain of remaining in the game. Others will be forced out altogether.

Many US chief executives see the consolidation as a much overdue rationalisation which only mimics the cuts in Europe over the past 25 years. This is a little ironic, since although many of the cottage industry manufacturers within Europe have been pushed together into larger national groups, they all have national markets which are in order of magnitude smaller than the US home base. When looked at from a European perspective, the European Union still has a smaller total defence market than the US and it is much more fragmented. Europe is nowhere near achieving the economies of scale which the US takes for granted.

What is perhaps worse from the European point of view, is that the situation is unlikely to change rapidly. Some cross-

border deals in less sensitive technologies are being done, for example a merger between Giat of France and Royal Ordnance of the UK is being negotiated. Yet even here national sensitivities are such that the UK is only prepared to be dependent on French munitions to the extent that France is equally dependent on the UK. Such cross-border rationalisation of the missiles business, with Matra and BAe teaming up and Aérospatiale and DASA getting together, are also under discussion. Still, progress is painfully slow.

The other great European experiment is in collaborative ventures, such as the Eurofighter. These seek to spread the cost of developing the most sophisticated systems across several countries with a sufficiently long production run to make them viable. Even here, the difficulty of co-ordinating several partners, the delays which politics can cause, the compromises and disagreements about specification and the spreading of work among the partners can mean that no-one gets the weapon they want and no-one saves any money. One national auditor of such projects doubted that any previous collaboration had actually proved cost-effective.

European governments may be prepared to tolerate the problem, since from national perspectives, the alternative of common European defence policy and procurement may be worse. Yet such inefficiency means either Europe pays more for the same level of defence than the US would, or it settles for less sophisticated equipment, or possibly both.

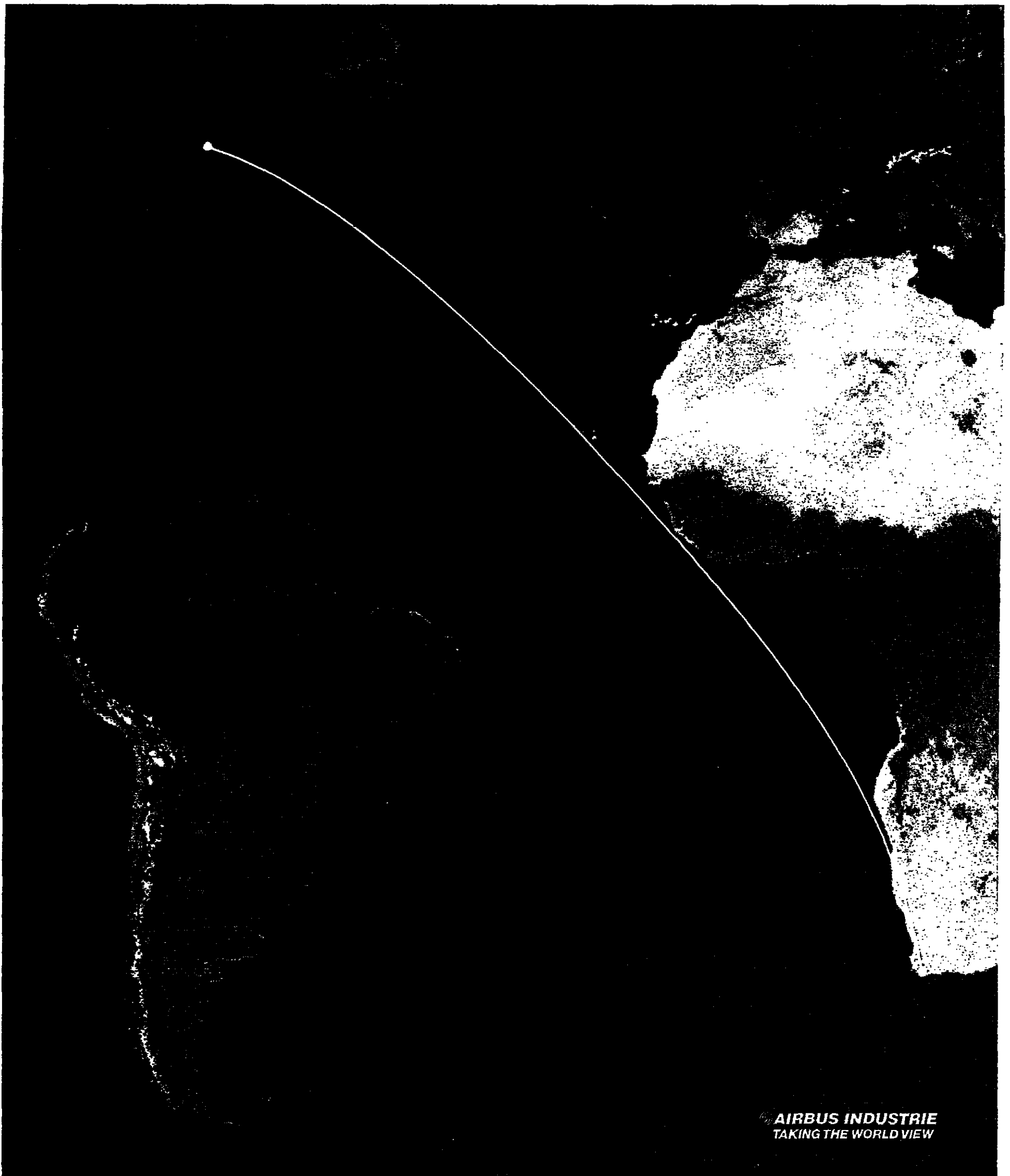
With the crunch to get value for money in defence spending growing, however, there will be increasing pressure to buy off-the-shelf US products rather than a tailor-made European solution. That problem is seen graphically in the present UK debate over the replacement of the RAF Hercules fleet, where a new European design is up against a proven US product. Even if the Future Large Aircraft were shown to have lower life-cycle costs than Lockheed's new C130J Hercules, the FLA group would have an uphill task persuading the UK to fund its share of development costs.

There is also a crunch in export markets. Cost is only one of the issues for purchasing governments. Traditionally, the effectiveness of weapons systems and political ties between governments have been more important. But the culture of value for money is spreading to hard-pressed governments. Unless the European arms industry starts cross-border consolidation, it may face a choice between subsidising its arms exports and leaving the field to the US.

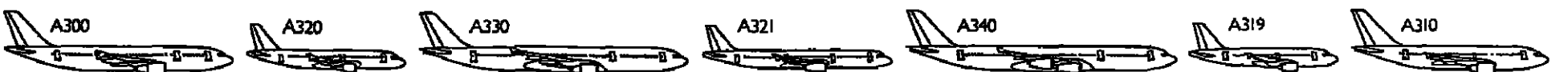
Bernard Gray

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AEROSPACE 4

The pain for airlines is by no means over, writes Paul Betts

A slow flight back into profit

The world airline industry expects to fly back into profit this year after suffering four years of record losses totalling \$15.6bn on international scheduled services alone.

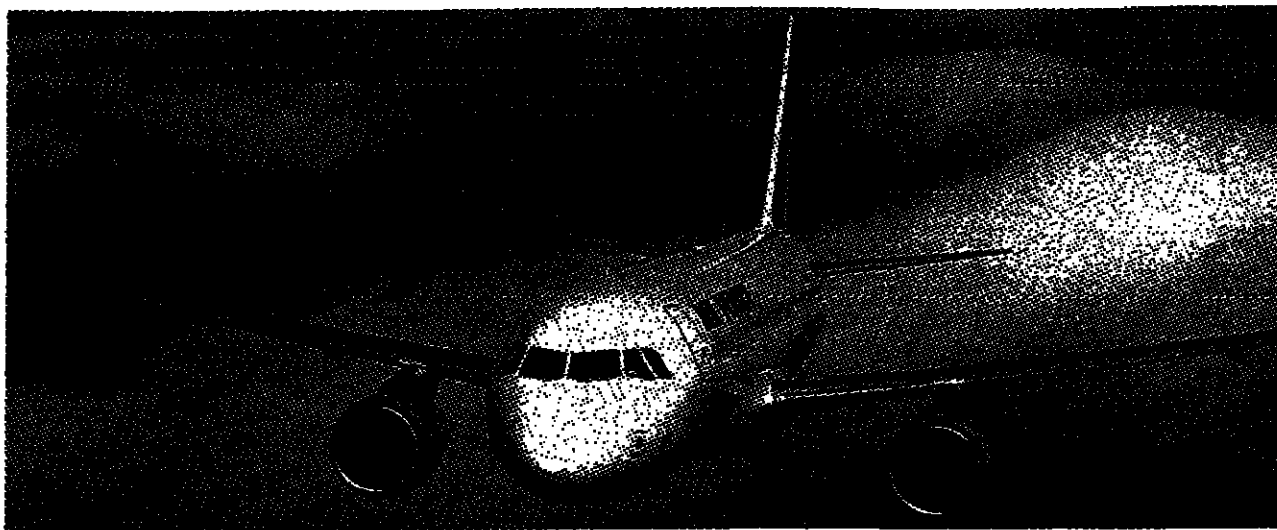
But the pain is by no means over as the industry continues to adapt itself to profound structural changes caused by increasing liberalisation and deregulation and the after shocks of the worst slump in the post-war history of civil aviation.

The International Air Transport Association (IATA) is now forecasting an industry profit of around \$1bn this year. "We are hopeful we have turned the corner," says Tom Murphy, senior director of the trade organisation grouping 224 airlines.

Even if \$1bn is better than nothing, it is still only a tiny fraction of the industry's total annual revenues of around \$110bn. What is more, the financial performance of airlines continues to show dramatic variations. A few, like British Airways and Singapore Airlines, are doing well; the majority are hovering around break-even point; and about a quarter are losing a spectacular amount of money.

Pierre Jeanniot, IATA's director-general, blames three factors for the continuing financial problems of the airline business:

- The world economies were denied a "soft landing" from the boom of the 1980s and airlines, which had continued to order aircraft in large numbers right up to 1990, were caught with too much capacity when the recession hit and was further exacerbated by the impact of the Gulf war on air travel.
- The huge level of aircraft orders was financed essentially by borrowing with the result that airlines now have to make an operating profit of at least 3.7 per cent of revenues just to service their debt.
- The increase in competition in the 1980s combined with increased liberalisation in air



Air France is getting \$3.7bn in government backing to help it recover

Picture: Glyn Quirk

transport policy and continuing over-capacity have had a devastating impact on real passenger yields.

IATA calculates that air fares have dropped by 68 per cent in constant money in the past 20 years and this trend has been accelerating. Although passenger traffic is expected to grow by an average annual rate of between 5-6 per cent during the next four years - with much higher growth in the Asia-Pacific region of around 8 per cent a year - this is unlikely to lead to any significant improvement in airline yields as has been the case in past cycles.

"In many markets, air travellers have now become accustomed to paying a particular fare level; and if fares are increased, they simply don't fly. So the airlines now have no choice but to find a way to provide a service at this fare level, rather than as in the past

seeking to maximise the fare charged for providing the service," explains Adam Brown, head of strategic planning at the European Airbus aircraft manufacturing consortium.

Airlines are also facing tougher competition in many markets not only because of the impact of increasing liberalisation, but also from new

Top 10 airlines
(scheduled passenger-kilometres performed - 1993)

Airline	Millions
American Airlines (2)	182,527
American Airlines (1)	153,302
Delta Air Lines (2)	133,346
Northwest Airlines (5)	93,548
British Airways (6)	80,086
Continental Airlines (7)	68,114
USAir (3)	56,681
Japan Airlines (8)	54,615
Lufthansa (10)	52,656
Qantas (16)	44,510

Last year's earnings in parentheses
Source: IATA

rival forms of transport. In Europe, the development of a high-speed rail network and the opening of the Channel Tunnel will inevitably intensify competition on shorter routes where rail can provide a fast and more direct service between city centres.

Low fares and new competitive forces will force airlines to continue pursuing cost-cutting and other productivity efforts to restore their profit margins. Considerable progress has been achieved by a number of airlines but many still have a long way to go to adapt their structures and operations to the new competitive, liberalised industry environment.

This is particularly the case for state-owned European carriers which are now facing far tougher rules from the European Commission on government financial support. The Commission wants to see the phasing out of all state aid to

airlines over the next three years. It has also warned airlines they will be allowed one last package of substantial aid as long as it is linked with a large-scale restructuring and cost reduction programme to restore their competitive position.

While financially troubled European state carriers like Air France, Olympic of Greece or Alitalia, are wrestling to restructure themselves (Air France alone is getting FF20bn [\$3.7bn] in government backing to help it recover), large US airlines have also been forced to adapt to new competition from low-cost carriers in their domestic market. The response of the leading US airlines has been to seek labour concessions and launch separate new low-cost subsidiaries to compete against the new breed of domestic US carriers of which Southwest is undoubtedly the most remark-

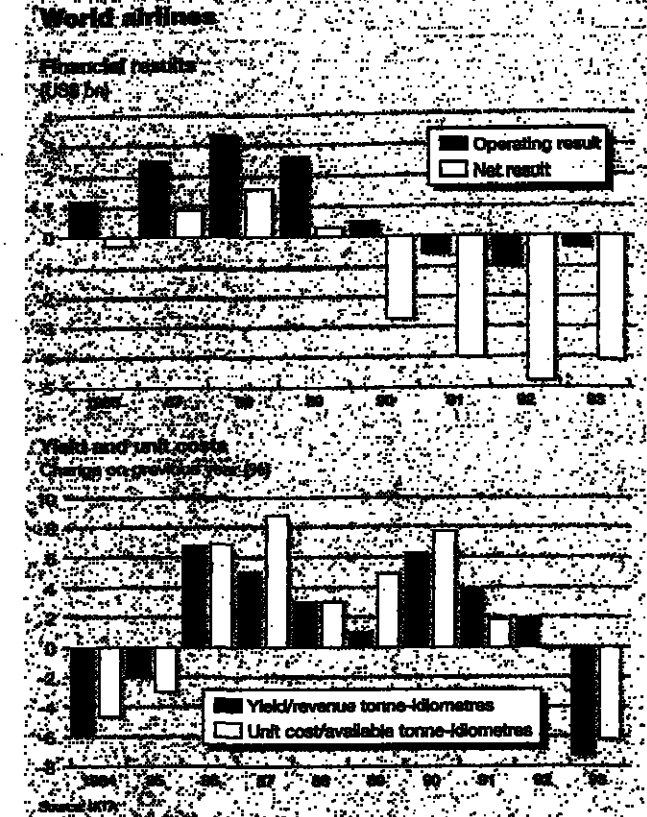
able phenomenon.

The move towards more "open skies" has also intensified the trend towards greater collaboration in an increasingly global industry. British Airways is one of the airlines to have taken the lead in developing a global network through alliances and equity partnerships including taking stakes in USAir, Qantas, the French regional carrier TAT and its new Deutsche BA airline subsidiary in Germany.

After the failed attempt last year by four medium-sized European airlines including Swissair, KLM Royal Dutch Airlines, Austrian Airlines and Scandinavian Airlines System (SAS), these European carriers have continued to seek commercial partnerships to strengthen their competitive position against the big carriers.

Many airlines have still been reluctant to take the BA route of investing in equity stakes in other carriers. Instead, they have sought to expand their international reach through marketing and commercial partnerships. This has increasingly involved the use of ticket code sharing which enables two carriers to use their respective ticketing codes to simplify computer reservations and cut costs.

With the industry's centre of gravity moving east, international airlines have also been multiplying efforts to form alliances with carriers in fast growing markets such as China or India anxious to secure western expertise to develop internationally. Singapore Airlines, for example, is



planning to form a new joint airline venture in India with the country's biggest industrial group, TATA industries. In China, Singapore Airlines and BA are actively discussing possible links with Chinese carriers in a civil aviation market developing at break-neck speed with annual growth averaging 20-30 per cent in the past few years.

But the industry's problems are not only financial, although as Mr Jeanniot of IATA emphasises, "the overwhelmingly urgent issue" remains airline profitability. Some progress has been made

during the past two years on improving air traffic and airport congestion, and increasing political awareness on the long-term risks of inadequate infrastructure to support the continued growth of international air travel.

Without a stepped up commitment from governments to invest in new ground and air traffic control facilities and technologies, the danger is that not only will future air travel growth be clipped but competition will continue to be distorted by preventing new industry entrants from gaining the necessary access to busy airports and airspaces.

Michael Donne examines the regional industry

Better times ahead

Over the past few years, the European regional aircraft manufacturing industry has been suffering from a severe shortfall in orders as a result of the recession which has bitten deeply into airline balance sheets.

That, in turn, has led to curtailed aircraft re-equipment programmes, resulting in reduced aircraft production rates and labour layoffs as a means of survival.

But while the market remains difficult, and highly competitive, there are signs of better times ahead. Airlines this year are expected to return to a collective profit, albeit a slim one of about \$1bn world-wide, which by no means compensates for the \$15.6bn losses on international scheduled services alone over the past four years.

Moreover, the long-term forecasts indicate that as the recession fades, traffic growth is likely to be resumed at an average of around 5 per cent a year through the next 10 to 20 years.

This, in turn, is likely to result in a renewed demand for regional aircraft of all types - jets ranging between about 50 and 120 seats, and turbo-propeller aircraft up to about 70-80 seats.

Avro International, the regional jet aircraft manufacturing subsidiary of British Aerospace, is forecasting a demand world-wide for 3,000 jets in the 65-120 seat range over the next twenty years, to 2013. Smaller jets, such as the Canadair RJ of around 50-plus seats, will also have a share of the market.

Such a market could be worth in excess of \$60bn. This forecast is generally agreed by Boeing of the US, which builds the 737 series of short-range twin-engine jets (with more than 3,000 sold to date in nearly 30 years of service) and is now planning not only a new series of 737s but also a "new small airplane", now being defined in detail.

These forecasts are based on the fact that many current trends in the air transport industry provide opportunities for the growth of the regional aircraft market.

Underneath the main medium-to-long-range trunk-line routes there is a vast network of complementary "connector and feeder" operations linking hundreds of smaller towns and cities with each other as well as with the major "hub" airports in capital cities. These are mostly short-haul flights, ranging from about 250-300 miles.

The European Union's "Third Package" of aviation liberalisation measures, introduced on January 1, 1993, including freedom of market entry and access to new routes, is still in its comparative infancy (unlimited "cabotage" - the right to operate unscheduled services in other countries than one's own - will not become effective until April 1, 1997), but it is clear that as the recession fades and traffic grows, the larger airlines oper-

ating from the main hub airports will require increasingly frequent regional services to feed them.

In turn, short-haul regional routes are increasingly being seen as a specialist operation. Says Avro: "There is already a significant move towards large airlines divesting the regional networks to affiliated carriers operating small regional jets, such as the R.J. Avrother family, which can provide more efficient and profitable services on the shorter, thinner routes. At the same time, competition at the major hubs will stimulate traffic growth at the smaller airports. Hub by-passing services will increase, and this again will lead to greater demands for regional jet aircraft."

"Older aircraft types with significantly higher maintenance costs, lower productivity, and inability to meet increasingly stringent noise regulations will be phased out of the regional routes, even allowing for some re-engineing and 'tush-kitting'. This will lead to an increasing demand for new and more efficient types."

Avro says that the largest market for regional jets will continue to be North America (42 per cent), followed by Europe (21 per cent), and Asia/Pacific (15 per cent).

However, the big problem confronting all the regional jet and turbo-propeller aircraft manufacturers is that the supply of available types is already vast, and far more than the market can really absorb.

This means that the already intense competition among manufacturers will become fiercer, with some builders perhaps being forced to quit the market, which no-one really wants to see - the airlines like to have a wide range of choice in their equipment purchases.

The alternative is for a rationalisation of the manufacturing side, through new joint ventures supported by mergers or other forms of strategic alliances in the industry.

Some have already occurred - for example, the 51 per cent stake in Fokker of Holland acquired by Deutsche Aerospace (DASA) of Germany - and over the immediate future there may well be further significant realignments in the industry's overall global structure.

This past summer, Deutsche Aerospace suggested that British Aerospace, together with Aerospaciale of France and Alenia of Italy, could be offered stakes in Fokker, as a step towards forming a European regional jet manufacturing consortium, particularly targeting new projects for the future.

Such a move would safeguard the continued development of those existing companies' product lines - the Avro RJ series and the Fokker 100 and smaller Fokker 70, and the turbo-propeller ventures of BAe (through Jetstream) and

of Aerospaciale and Alenia through Avions de Transport Regional (ATR). It would also seek to avoid conflict with Airbus (in which DASA, Aerospaciale and BAe are all partners), which is itself marketing vigorously its own 130-seat A-319, due to enter service in the spring of 1996.

The prime objective of such a new European consortium, were it ever to materialise, would probably be a new small 110-seat aircraft, called the Future Advanced Small Airplane (FASA), which would be designed to compete directly with Boeing's own New Small Airplane (NSA) project.

Boeing has begun detailed studies on the NSA, in co-operation with Japan Aero Industry (JAI) and China National Aero-Technology Import and Export Corporation (CATIC), with a view to an eventual joint venture that could seize especially a significant slice of the rapidly expanding Asia/Pacific regional jet aircraft market.

Also on the international front, Aerospaciale has offered to join Chinese and South Korean companies in developing a 100-seat regional jet for the Asia/Pacific market. At the same time, although earlier talks between Avro and Taiwan Aerospace on collaboration failed to get off the ground, both companies remain interested in the rapidly growing Asia Pacific market.

But because of their already strong background in the regional aircraft markets, the possibility of a significant consortium of European companies emerging with global competitive capability should be taken seriously, especially if widened to include other European aircraft manufacturers such as CASA of Spain and SAAB of Sweden.

Linked in such a way, the European industry could prove a powerful competitor for Boeing. The Europeans already have immense experience - collectively they meet virtually every regional airline need from small 10-seat twin turbo-prop aircraft up to 100-plus-seat twin-jet aircraft.

There is no lack of innovation, and many of the companies involved are looking ahead with new ideas for either product improvements or entirely new aircraft models.

The problem in setting up any new consortium would be determining not just the financial contributions, but also to what extent each partner would be prepared to sacrifice cherished individual concepts in favour of united ventures.

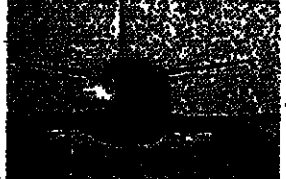
Many in the European aerospace industry believe that putting together such a consortium is the only way ahead, and the abandonment of some concepts, however painful, is to be preferred to a continuation into the next century of the fragmented activities which could lead to negligible individual market shares and the likelihood of profits for no-one.



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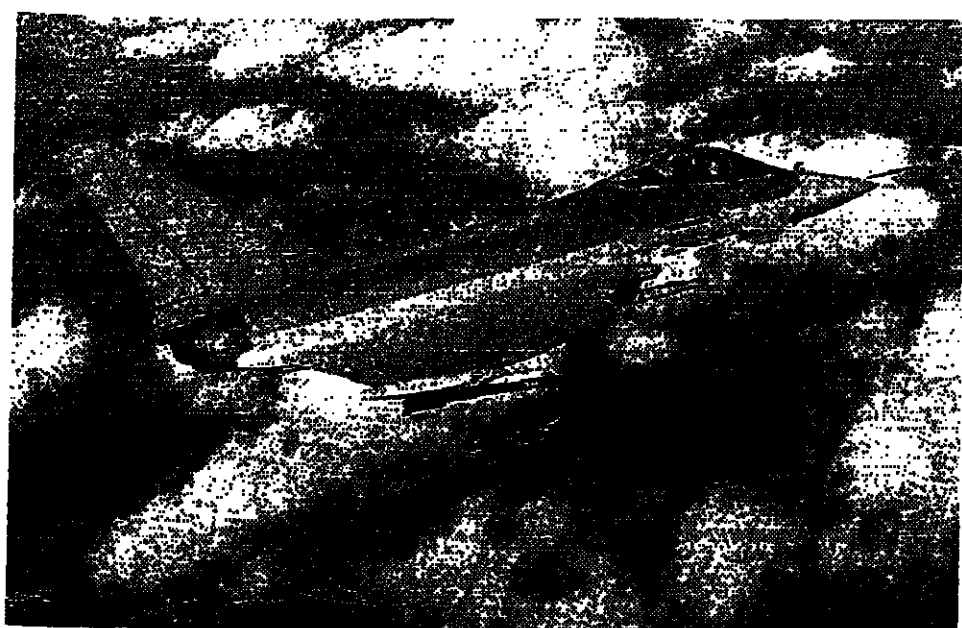
BOEING

Times have rarely been tougher for the makers of military aircraft. In western domestic markets, manufacturers are being relentlessly squeezed by reduced military spending on the one hand and escalating development costs for the next generation of equipment on the other. Export markets are also shrinking, because traditional Gulf states buyers are also short of cash.

What is worse, now the cold war has ended, few western countries have a clear idea of the threat which the next generation of advanced aircraft will have to meet. As a result, many aircraft development programmes are being stretched and there is increasing doubt about whether some aircraft under development will ever enter service.

Perhaps the safest of all programmes in this shaky situation is the F-22 US air superiority fighter. The aircraft has been under development for the past five years by Lockheed and Boeing and is designed to be a Mach-2 radar-evading "stealth" aircraft which will guarantee the US command of the air up to 2020. Since air superiority is seen as vital by the US - a view confirmed by the Gulf War - the F-22 has strong backing from the air force, the Pentagon, and, crucially, from Congress.

Because dominance of the air is seen by the US as an end in itself, few question the threat the F-22 will have to counter or the vast \$71bn cost of producing the 432 air interceptors.



Eurofighter continues to be dogged by worries about German commitment to the project



The British Aerospace Hawk 200 is equipped with wingtip Sidewinder air-to-air missiles

Bernard Gray discusses the dilemma faced by defence departments and manufacturers of military aircraft

Battle is on to design fighter of the future

Indeed, with plans for a new naval fighter to replace the P/A-18 scrapped, the department of defence is considering a carrier-based variant of the F-22 instead. And as the F-111 long-range strike aircraft is being retired early in 1995, the F-22 is one possibility to undertake that kind of air-to-ground strike mission.

Despite the crash of one of

the YF-22 prototypes, development is proceeding well. Work remains to be done in reducing the aircraft's weight and improve its stealth, but the programme is progressing smoothly.

Lockheed, which has two-thirds of the project now that it has bought General Dynamics' tactical aircraft business, has yet to decide whether to

consolidate its operations on one site, or continue development at Fort Worth in Texas and at Marietta in Georgia. While working on one site might be more economical, Texas is an important state politically and Georgia is the home of the leader of the Senate armed services committee. The company will thus have to balance politics against economics in deciding the future of the programme.

In Europe, there is less certainty about the future of next generation fighters. Eurofighter continues to be dogged by worries about German commitment to the project - worries which are unlikely to be resolved until after the federal elections this autumn.

If Germany does reduce its order for Eurofighters, there will be some difficult negotia-

tions about how work in the production phase should be split between the British, German, Italian and Spanish partners. Germany would not be entitled to the third of construction work it was originally allocated if it orders fewer than the 250 Eurofighters it indicated it might buy or even the 140 recently mooted.

The UK may even strengthen its hand by ordering more than the 250 it originally signed on for and buy another 100 fighters to replace its Tornado interceptors. However, transferring the tooling from German factories to other partners might be uneconomic and an alternative solution may have to be found.

Potentially more damaging is the worry that uncertainty

over the German position could delay the programme further, increasing costs and, if the in-service date slips, reducing the Eurofighter's technical edge over potential rivals. As one US industrialist said, "Eurofighter is a good aircraft."

Few countries have a clear idea of the threat facing the next generation of aircraft

but they really must get on and build it before it dates."

Cost concerns on such collaborative programmes are also worrying governments. While the partners want to spread the development costs by working together, duplication of effort and progress at

the pace of the slowest dills the benefits. A British government official said that he would be surprised if any of these collaborative programmes had saved money over a solo development project in the end.

France and Sweden have avoided the pitfalls of collaboration by going it alone with their Rafale and Gripen fighters, but they have their own problems. Exports will be difficult for either aircraft since it will be in service with fewer air forces than the Eurofighter.

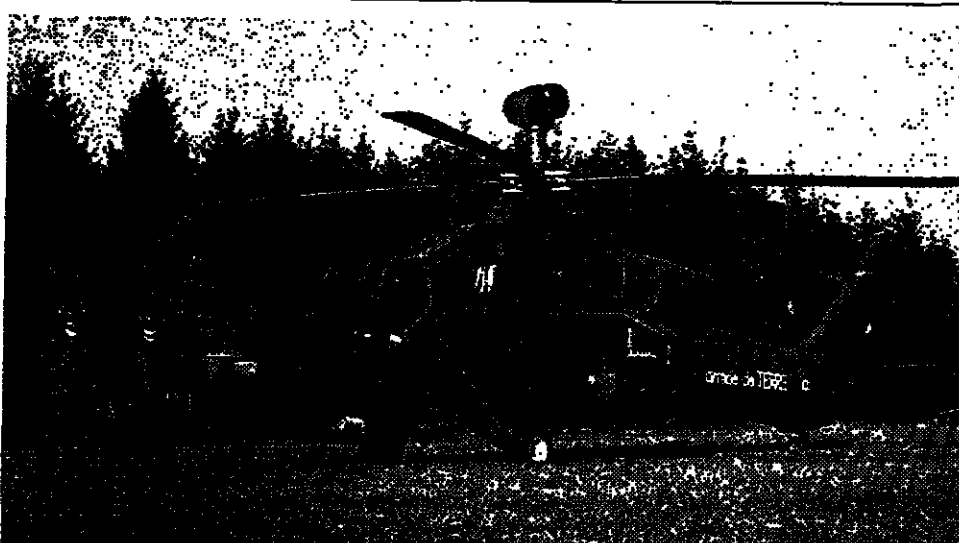
If times are tough in fighter aircraft, they are scarcely easy elsewhere. The US has stopped production of its B-2 stealth bomber at 20, though Congress has voted \$100m to keep the production line open for another year.

Northrop-Grumman, the aircraft's manufacturer, has offered to make a further 20 aircraft for a bargain \$595m each. While this is less than the \$850m which the first 20 cost, it may not be cheap enough to make a cash-strapped department of defence open its wallet.

Another over-budget Californian aircraft is also in trouble. The C-17 strategic jet transport aircraft has already cost its maker, McDonnell Douglas, about \$1bn in cost overruns. The department of defence has suggested building 40 aircraft and then evaluating its performance with a view to building the 120 originally planned. But at almost \$300m each, the aircraft is hideously expensive. The C-17 must pass a month-long examination next year - including simulated operations under war conditions - if it is to secure further funding. However, as California will be a key state in the 1996 presidential election, President Clinton will have to think long and hard before scrapping the programme.

In Europe, the debate is over tactical military transport with a consortium that is likely to come under the Airbus aegis keen to develop a replacement for the Hercules. The Future Large Aircraft would be able to carry larger loads than the Hercules and would fly faster, but would also cost more. Estimates of its development costs run from £2bn to £5bn, and while continental countries are enthusiastically promoting the idea, full funding is not yet in place.

Perhaps unfortunately, the FLA's first battle is against the new C-130J Hercules to replace the RAF's existing fleet. With Britain lukewarm about the project, it is an uphill climb. But with military budgets likely to be under pressure everywhere for the foreseeable future, it is the kind of battle that aerospace manufacturers worldwide are going to have to get used to.



The Tiger attack helicopter faces strong competition from the Apache

Bernard Gray looks at the market for helicopters

There's a lull in the life of a cottage industry

The cottage industry of helicopter manufacture has had as much trouble as the rest of the aerospace industry in recent years. With three-quarters of all production destined for the military market the fall in weapons procurement has taken its toll. Particularly so since the US military, long the most enthusiastic devotees of the helicopter as transport and weapon, had filled the bulk of their Apache attack programme and were in any case headed for a lull.

In the civil market, the recession in Europe and the US has taken its toll on orders, too. Corporate executives cutting staff can hardly be seen ordering the new executive aerial ambulance.

As a result, the helicopter business, which has persisted as a slightly quirky specialism running at steady if unspectacular volumes from traditional sites, has experienced the kind of lull, and inevitable retrenchment, which it had avoided for many years.

But because almost all manufacturers are owned by large conglomerates, there has not yet been the rationalisation seen in many other aerospace sectors. There are still seven principal helicopter makers - Eurocopter, Westland and Agusta in Europe and Bell Textron, Sikorsky, Boeing and McDonnell Douglas in the US. Even the one which was put up for sale, McDonnell Douglas's helicopter operation which produces the very successful AH-64 Apache, was eventually withdrawn from the market due to lack of interest.

Nor is it at all clear that further consolidation is close. One industry executive points out that while the businesses are individually small they mostly occupy separate niches. The only company to change hands, Westland, lost its independence to GKN, the automotive engineering company, rather than another helicopter maker. If there is to be consolidation of the number of manufacturers, that may well be as a result of changes in corporate strategy by the parent companies, rather than conditions in the helicopter market.

Nonetheless, conditions in the market mean that parent companies and governments sponsoring helicopter development face some difficult

choices. In Europe, the development of three helicopters is placing great strain on government budgets.

The Westland-Agusta EH-101 large helicopter has perhaps the safest future. It has a production contract for 44 anti-submarine warfare naval variants from the Royal Navy, and looks certain to get a further order for 25 utility transport versions from the Royal Air Force later this year. The Italian government is also due to order some, and interest has come from potential export markets, notably from Saudi Arabia, which is interested in the ASW variant.

The other two helicopters being designed by European

Parent companies and governments sponsoring helicopter development face some difficult choices

teams face a more uncertain fate. The NH-90, being designed by the Franco-German Eurocopter group in collaboration with Italy and the Netherlands, is a smaller utility helicopter which would transport about 20 troops. There is a market in replacing ageing Puma and Sea King transporters, but the development costs are high, and there are several competitors.

The Tiger attack helicopter also addresses a strong market as more armies move towards the US doctrine of integrated air-land battle, with helicopters and tanks working in tandem. However, it too faces strong competition from the Apache and, for armed forces looking for something a little cheaper, the revamped Bell Cobra Venom with a new glass cockpit made by GEC-Marconi. With defence budgets stretched both the NH-90 and the Tiger may not make it into production.

In the US, Boeing will continue to hold the niche for very large helicopters with the Chinook, not least because the cost of developing an alternative would be prohibitive. Bell Textron also look likely to keep their strong position in light helicopters.

But McDonnell Douglas will have to continue to evolve away from its dependence on the Apache, and Sikorsky cannot be entirely sure of the future of the next-generation

Comanche reconnaissance and attack helicopter. At present the Comanche has firm political backing, but if the budget squeeze gets much worse, the Comanche may come under pressure from the Apache.

The V-22 Osprey helicopter-cum-prop-aircraft also has strong backing, but the future of several of the helicopters, and the fate of their manufacturers, will rest on procurement decisions in the next few years. In particular, the race to replace ageing US marine fleets will be important.

In Europe, too, there are several important procurement decisions pending. Most prominent, and immediate, is the UK's requirement for a £2bn programme of 91 attack helicopters. Here the competition is between the Apache, which would be manufactured under licence by Westland, the AH-1W Cobra Venom with the GEC-Marconi glass cockpit, the Tiger with British Aerospace participation, and the South African Rooivalk.

The Apache has long been the front-running favourite with the British Army, but it is probably also the most expensive helicopter, both in purchase price and through-life costs. The Cobra Venom is cheaper and the new cockpit is a great improvement on the old Vietnam veteran version, but it is only a twin-bladed machine, and its weapons load is thus limited.

The Tiger is also smaller than the Apache, and while it is the newest technology, it is also relatively expensive and will struggle to carry the full weapons complement specified by the ministry of defence. The Rooivalk is almost certainly the cheapest option to buy, though its avionics may need such radical updating that it is not really a viable option.

Because the order is one of the largest to be placed for attack helicopters in the next few years, it will have a significant impact on the market. If the Apache wins, McDonnell Douglas will have longer to develop future alternatives. If the Tiger wins, Eurocopter will have made the breakthrough it has been looking for. The Bell Cobra would give GEC-Marconi an excellent opportunity to extend its range of glass cockpit avionics, and the Rooivalk would give South Africa a huge boost in international arms markets.

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AEROSPACE 6

Bernard Gray looks at the way ahead for manufacturers of missiles

Everyone is aiming to get smart

The Gulf War has coloured thinking in most areas of military doctrine. So much so that the sales pitch now chanted by all arms dealers is that their products were vindicated in Operation Desert Storm.

Of those systems which genuinely had their reputations enhanced, stealth technology, while expensive for most nations, was a worthy runner-up. The clear winners, however, were guided weapons. Pictures of precision-guided "smart" munitions not only impressed the watching taxpayer, they also made an impact on force commanders under pressure to keep casualties at a minimum.

Some watchers are now so enthusiastic that they think guided weapons will take over from traditional ordnance. "The way ahead is definitely with smart weapons," says Kent Kresa, chairman of Northrop Grumman. "Given the desire to protect troops, I can't see the US ordering any

dumb munitions at all as we develop new technologies."

Yet, while the idea of using guided missiles is popular, the overall pressure on all western defence budgets is still making life tough for missile manufacturers. In the UK there is interest in developing a long-range conventionally armed air-to-ground missile, but it remains to be seen how much funding is available for the project.

The US is also keen on advanced technologies and is still pursuing scaled down "star wars" anti-missile missiles through its theatre ballistic missile defence. Projects such as Lockheed's Theatre High Altitude Area Defence (THAAD) missile have received backing and THAAD has a four-year \$689m development contract. Yet, even in the US missile manufacturers are having to adjust as procurement spending falls.

As elsewhere in the defence industry, rationalisation and merger are seen to be the way to cope with the downturn.

The consolidation seems to be proceeding more smoothly in the US than Europe. In a typical deal aimed at reaping the full benefits of rationalisation, Hughes acquired General Dynamics' missile business, and then consolidated all manufacturing on its own site in Tucson, Arizona, and closed General Dynamics factories in southern California.

In the US, Raytheon and Hughes lead the pack while Martin Marietta and Lockheed are still involved as missile manufacturers, but beyond that it is by no means clear how many groupings will survive. Construction of some systems is still split between several companies, increasing overheads. Whether the market can sustain more than two or three mainstream missile makers is questionable.

In Europe, the outlines of possible mergers are beginning to become clearer, but progress is still painfully slow. Much collaboration has been on specific programmes, for example

the BAE-Aérospatiale-Deutsche Aerospace Trigat anti-tank missile. But such collaborative ventures tend to suffer from many of the disadvantages of high overheads and compromise designs. Still, since missiles contain some of the highest technology under development, countries are reluctant to release control for national security reasons as well as industrial concerns.

There are talks about wholesale mergers, some of which have been mooted for a long time. British Aerospace's negotiations with Matra continue unabated, while hints of a merger between Aérospatiale and Deutsche Aerospace's missile businesses gather pace. In part, these mergers would help cut out duplication in research and development, and would cut down on the high level of cut-throat competition which has hurt profit margins. It may also be a prelude to a grand missile merger of both groups to form a European missile giant which could be capable

of developing the kind of ballistic missile defence systems some European countries are starting to covet.

It is more difficult to see how the electronics manufacturers for missile systems - companies such as GEC-Marconi in the UK and Thomson in France - fit in to such a grand scheme. It may be that by providing sophisticated specialised equipment, such as sensors, to a range of missile makers worldwide, they can gain sufficient scale to remain viable in their current form. Equally, there may be a horizontal merger between electronics companies to produce a large sub-system supplier. But the idea that GEC-Marconi might take over BAE Dynamics, for example, seems to have faded.

Other ways of cutting costs in the hostile environment are also being tried. Efforts are being made in Europe and in the US to cut costs by transferring technologies between missile systems. Unfortunately, adapting equipment from



Cruise missile under construction: a clear winner in the Gulf War

Picture: Oly Com

air-to-air missiles for use in ship-to-ship combat is neither as easy nor as obvious as it might appear. The conditions under which the missiles have to operate vary so much that a weapon optimised for conditions on the wing of a Mach-2 fighter may suffer badly when exposed to corrosive sea spray.

As with so many areas, decisions on procurement will determine which companies gain the upper hand in mergers, and, indeed, which can survive in the missile business. In the UK, there is a need for a long-range stand-off air-to-ground missile based on the Gulf War experience. A new medium-range missile is needed for the Eurofighter, and a short-range anti-armour air-to-ground missile for the Harrier is under consideration. A range of anti-armour and anti-ship weapons are being developed in continental Europe and the US is considering a new short-range air-to-air missile.

Unless individual countries are prepared to allow transfer of missile manufacturing abroad, and it remains one of the most sensitive cutting edge technologies around, Europe will continue to pay higher prices for fewer weapons than the US. Rumour suggests that the long-awaited BAE-Matra merger may be announced at Farnborough, as a 50-50 joint venture and a Frenchman in the chair. If it happens, it will not be a moment too soon.

The twin forces of recession and cuts in defence spending have forced consolidation and restructuring on the world's avionics and component suppliers.

The end of the cold war led western governments to reduce military spending. In civil aviation, the prolonged recession, and the Gulf War not only decimated the tourist industry sharply reducing passenger numbers, but coincided with a glut in airlines coming off the production lines. Although airline traffic has started growing again, several hundred aircraft remain parked in the desert.

It was thus only a matter of time before manufacturers of components and avionics, the next tier down in the supply chain, would be forced to share the burden. Customers have not only been pushing for cost reductions among the suppliers but have been demanding more sophisticated products and reducing the number of suppliers with which they have to deal.

The sector's response has been consolidation and restructuring which some say is similar to one seen in the

automotive industry a decade ago.

Much of it has taken the form of mergers and acquisitions though strategic alliances have not been far behind, bringing together once bitter competitors, with cost and risk sharing being a prime mover in the drive for market leadership.

Examples of companies moving in that direction include Smiths Industries of the UK which formed an alliance with its competitor Rockwell International Corporation of the US three years ago, to provide full flight integration systems. Some saw this as an attempt by the new group to compete with Honeywell, the US electronic control systems group which is the market leader in that field. Honeywell has in turn formed an alliance with two UK companies; one with Racal on satellite communications systems and another with the GEC on the fly-by-wire systems.

But not all proposed alliances have been carried through and this year the biggest disappointment has been the failure of the proposed merger between France's Sa-

Avionics: Joel Kibazo on the move by companies to restructure operations

Size is the critical factor

tant-Avionique and Allied Signal of the US. The deal would have made the combined group number three in its field. But where a merger or alliance has been successfully carried out, manufacturing improvement initiatives have been introduced and new technologies developed.

The restructuring in the sector began in the United States, the world's biggest aerospace market, and the first to face the chill winds of recession, and the first wave of defence cuts.

Deals by prime contractors such as Martin Marietta's acquisition of General Electric's aerospace division in 1992 and General Dynamics' sale of its missiles subsidiary to GM Hughes in the same year were cited as the trigger for a similar shake-up or "re-engineering" among the suppliers.

The search for market lead-

ership has usually been the driving force behind the consolidation attempts. Companies with product lines in third or even fourth place in their chosen market place have been forced to either quit the field or seek an alliance in an attempt to strengthen their market position.

Mr Paul Saleh, vice-president and treasurer at Honeywell, which is a supplier to both the military and civil aerospace markets, said: "What we have seen over the last few years is a need for each supplier to be a leader in its specialised field. You have to be a leader in technology with a reputation for delivery and have the trust of the customer."

He acknowledges that size has become the critical factor, and says it is not only useful in terms of economies of scale but also suggests it is the bigger companies that can afford the

ever increasing development costs. "This is a global market that is becoming more competitive and there is little room for marginal participants," he said.

Mr Saleh highlighted a new move in the restructuring process, that of "out-sourcing" of a complete part of the production process, to the supplier.

This he believes will become increasingly prevalent among suppliers to the civil sector in which change has been slower than on the military side, due in part to the small number of big manufacturers, McDonald Douglas, Airbus, and Boeing.

Earlier this year, Boeing provided the biggest example of "out-sourcing" to a supplier with its decision to hand over the complete manufacturing and integrating of the flight deck system on its new 777 air-

liner to Honeywell.

The move was not only seen as an attempt to meet customer induced cost cuts but was hailed as a first in "working together with the customer" by suppliers. It is also seen as a possible indicator of the next level of restructuring as Honeywell attempts to push costs of its suppliers lower.

European companies have been no less ready to meet the challenge of the new harsh environment and analysts have pointed to possible cost benefits of between 10 and 20 per cent from restructuring the industry.

Lucas Industries, the automotive components and aerospace group, is cited as an example of a company that is attempting to become a world leader among European suppliers.

Mr Frank Turner, managing director of Lucas Aerospace,

said: "We took a look at what was happening in the industry and at ourselves and decided we had to do something if we were to remain in the game."

The company has gone all out to transform itself from a component supplier to the aerospace industry into a systems integrator. As part of that plan it paid £18.5m a year ago to acquire TI Group subsidiary Dowty's fuel control business and in June signed a joint venture agreement to establish a repair and overhaul facility for engine and flight control systems in China.

But it is 1993's merger between Dowty and Snecma's Messier Bugatti of France to form a world leader in landing gear that many have pointed to as the clearest example of the restructuring that is taking place among component suppliers in Europe.

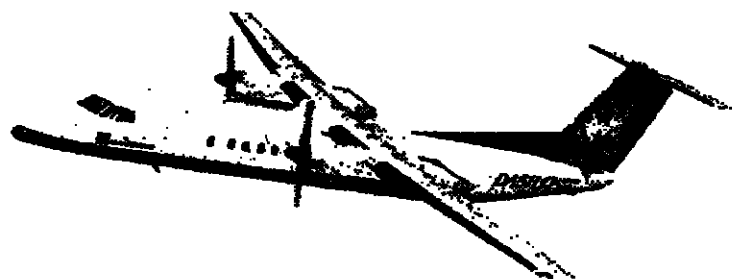
Mr Tony Edwards, chief executive of Dowty Aerospace, said: "We wanted to be a world player in landing gear so we align ourselves to achieve that goal. We sold those businesses where we could not be a global player."

However, analysts say sim-

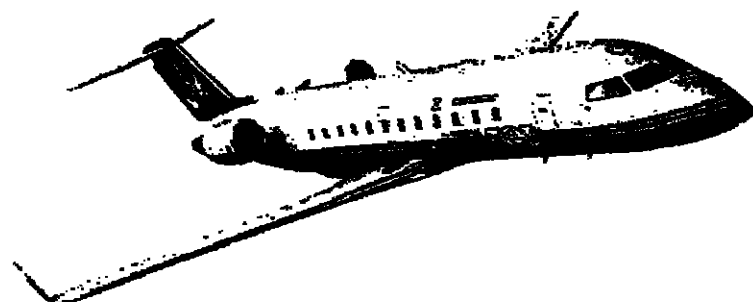
lar deals will be more difficult to achieve. They point to nationalism - the wish to retain a particular industry in a country - and sensitivity to national defence interests as two factors that may act as a brake on restructuring. Thus alliances, rather than straightforward mergers, may be the route for European companies wanting to compete with the giants of the US.

But Mr Paul Compton, aerospace and defence analyst at Credit Lyonnais, believes joint ventures are of less benefit than full mergers as national interests tend to intervene especially on decisions such as a reduction in staff numbers. Thus, he said, the very nature of a joint venture was likely to create inefficiency.

He concluded: "The US sector is almost twice the size of that of Europe and what is more it is homogenous and thus does not suffer from nationalistic barriers. Europe will have to decide whether its nationalistic differences can be forgotten in a bid to form global companies or it will be left behind in a key world industry."



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Paul Betts looks at the industry's next challenge – the super jumbo

The race is on to build the big 'un

The world's two leading commercial aircraft manufacturers – Boeing of the US and the European Airbus consortium – have been stepping up the pace in their efforts to meet what they believe will be the next big challenge for the industry: the development of a new generation of super jumbo airliners capable of seating 600-800 passengers and possible even more.

For the past two years, Boeing and the four Airbus partner companies including Aerospatiale of France, Deutsche Aerospace, British Aerospace and Casa of Spain have been conducting joint studies on how to develop and market together a Very Large Commercial Transport (VLCT). But the two sides have also remained deeply suspicious of each other and have continued to pursue their own studies in the event their ambitious VLCT collaborative project collapses.

So far only two airlines have said they would be prepared to commit themselves to buying a super jumbo. Not surprisingly, the two are the world's most profitable carriers, Singapore Airlines and British Airways.

However, most other international carriers, still struggling under the burden of financial losses and debt accumulated during the industry's worst post-war recession, have been reluctant to express anything more than a vague interest in a large capacity airliner which is likely to cost them around \$200m a piece.

That has not deterred the two manufacturers on each side of the Atlantic to pursue their studies. They believe that in the longer term there will be a requirement for around 300-500 super jumbos in the next century. They see these extra large aircraft as providing a solution to increasing congestion at busy international airports and air routes at a time when air travel is expected to continue showing steady expansion and in some areas in the Asia-Pacific region vigorous growth.

"We think a big aircraft is necessary to cope with traffic growth and congestion at airports, especially when you consider that 33 airports alone

account for 50 per cent of world air traffic," says Claude Tavarozzi, head of the commercial aircraft division of Aerospatiale, the French Airbus partner.

Sir Colin Marshall, BA's chairman, explains that a super jumbo would help the UK carrier tackle some of the growing congestion problems at its London base of Heathrow. It would also give BA the opportunity to offer new services for passengers. BA has already made its own design studies for the configuration of such an aircraft, including the introduction of inflight business offices equipped with faxes, telephones and personal computers, a cinema-style

So far only two airlines have said they would be prepared to commit themselves to buying a super jumbo – Singapore Airlines and British Airways

inflight entertainment room, and even a work-out section for fitness addicts.

"We see the use for such an aircraft on Far East routes, Australasia services and across the Atlantic," Sir Colin says. "And we would be willing to go forward with a new aircraft of 600 seats offering the same long range but also 20 per cent lower operating costs than the Boeing 747-400," he adds. Jean Pierson, the Airbus chief executive, believes there will be demand for a very large aircraft by the turn of the century. "By around 2002, airlines will have to consider replacing their existing 747-400 fleets," he explains.

But both Boeing and Airbus agree that there is unlikely to be room in the market for more than one new super jumbo project in view of the programme's heavy development costs estimated at around \$80m-\$100m. This was the main reason behind the decision of Boeing and the four Airbus partners to consider collaborating in the same way as US, European and Japanese manufacturers believe that the eventual development of a next generation supersonic airliner to

replace Concorde will need the broadest possible international co-operation.

Although Boeing and the Airbus partners have pursued their joint VLCT studies, there have been growing signs of tensions emerging between the two sides and strong possibilities that they will ultimately decide to part ways.

Airbus has become increasingly worried that Boeing is using the joint studies as a tactic to delay the European consortium's entry into the very large aircraft market and challenge the US company's traditional monopoly of this sector with its 747. The Airbus theory is that Boeing is in no hurry to launch a new large aircraft development programme at a time when its hands are already full with other projects including its new 777 widebody twin-engine airliner, the renewal of its 737 family of narrowbody twin-engine airliners and the development of a cargo version of the 767.

Boeing has clearly been anxious to protect its dominance of the top end of the market and has maintained close contacts with airline customers. Apart from the joint studies with the Airbus partners, Boeing has been considering developing a bigger version of the 747 with a new wing. It has also been studying the development on its own of a new very large aircraft.

With increasing signs that Boeing's preferred option is to build a bigger derivative of the 747 and that the Seattle manufacturer is already quite advanced with its studies, Airbus recently decided to step up its own efforts to develop a new 500 to 600-seat jumbo, the A3XX.

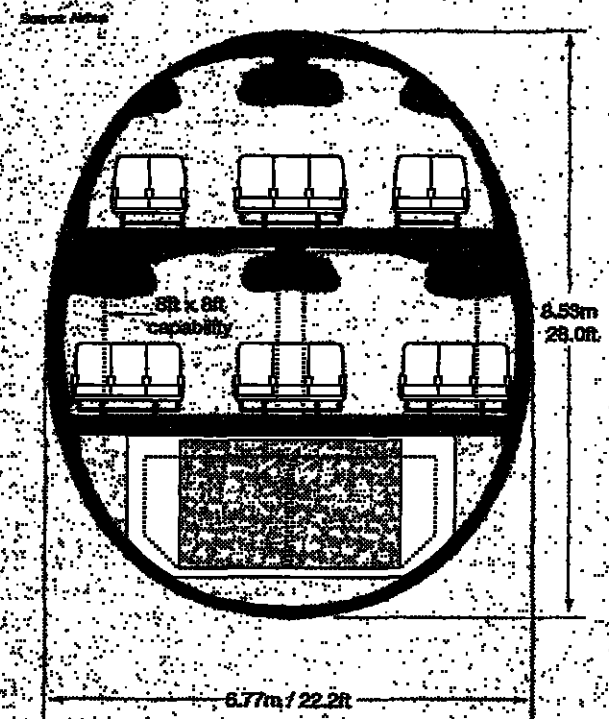
"You simply cannot afford to be out of such an important segment of the market if you want to remain a leading aircraft manufacturer," says a senior Airbus official. All manufacturers expect the top end of the airliner market to become increasingly important with aircraft of more than 400 seats accounting for more than 40 per cent of the value of the civil aircraft business in the next 20 years.

"We must give Boeing the strongest possible signal that

Airbus A3XX



Graphic illustration



Airbus will develop its own jumbo if Boeing decided to go it alone with a bigger 747," adds Louis Gallois, the Aerospatiale chairman.

This has prompted the Airbus supervisory board to give the consortium the go-ahead to start marketing in September its new A3XX jumbo to a selected group of international airlines after the Farnborough Air Show. The Airbus plans

involve an aircraft with two decks running the full length of the fuselage, powered by four engines and would have a range of 7,000-8,000 nautical miles.

With the probabilities increasing that Boeing and Airbus will ultimately decide to go their own separate ways in the jumbo market, the race is now on to build the world's biggest aircraft.

Michael Donne on a successor to Concorde

SST-2 is still far away

The development of a second-generation supersonic airliner to succeed the Anglo-French Concorde depends on two factors – satisfactory financing and production arrangements and solving the outstanding technological difficulties, especially those affecting the environment.

Few doubt that such an aircraft will eventually emerge, although it is now accepted that its likely birthdate may be around 2010 to 2015.

By 2000, Concorde will have been in service with British Airways and Air France for nearly 25 years, so that every year thereafter heightens the possibility of either a diminution of existing supersonic services as Concorde ages and are "cannibalised" for spares, or a gap of some years before a successor emerges.

Despite the aerospace industry's desire to start developing a successor, there is little enthusiasm for such an aircraft among the world's leading airlines, faced as they are with their cumulative losses of more than \$15bn over the past four years. They are more inclined to spend their available cash on airliners that are more likely to meet mass market demands, help reduce congestion and generate profits, than on second-generation supersonic transports. As a result, they are far more interested in a new subsonic 500-plus seater, the so-called megajumbo, than a second-generation supersonic transport.

Moreover, the airlines remain suspicious about the financial and environmental acceptability of an SST-2.

The two airlines flying Concorde, British Airways and Air France, have made it clear that while they may be interested in the long-term in any SST-2, they want to be absolutely sure that such an aircraft is profitable to buy and fly from the start, and totally acceptable in every way to the communities it will serve. They are keenly aware that government-imposed environmental constraints upon the airlines and aerospace industries are likely to become even more stringent in the next century, and such an aircraft, may well face environmental con-

straints that have not yet even been defined.

The SST-2 research so far has been concentrated on an aircraft seating 300 passengers (against Concorde's 100), with a range of about 5,600 to 6,000 nautical miles (against Concorde's 3,000), and a speed of around about 1,500mph.

Despite the undeniable advances in research into supersonic transport technology since Concorde first went into service in 1976, especially in the reduction of nitrous oxide emissions (NOx), the latter remain a problem.

There is also still no answer to the sonic boom created by large aircraft flying at twice the speed of sound even at high altitude. This means that future supersonic services would still be largely restricted to over-ocean routes, with subsonic flights over land masses. This, in turn, means that interest in such aircraft is likely to be confined to those airlines with a substantial number of long-distance over-ocean flights in their overall operational patterns.

There is also the problem of development cost, likely to be between \$8bn-10bn, or about the same as the cost of any subsonic megajumbo. It is doubtful whether aerospace industries could finance both developments in tandem.

Although demand for the megajumbo may be limited – with perhaps only a score or so airlines likely to support it initially – its ultimate market seems likely to be significantly larger than that for a second-generation SST. The airlines believe that the subsonic megajumbo is more likely to improve their battered balance sheets.

Another reason for airline scepticism about the SST-2 is that while much technical research is under way, especially in the US through the government-sponsored National Aeronautics and Space Administration, there is still no sign of a coherent and practicable design, development, production and marketing plan for such an aircraft.

While theoretically the airlines might prefer to have competitive designs from which to

choose, industrial and financial logic dictates that one common design would stand more chance of economic and technological success.

But any kind of agreement on such a formula appears to be a long way off. There have been wide-ranging international discussions between the US manufacturers, Boeing and McDonnell Douglas, and their European counterparts, British Aerospace, Aerospatiale, Alenia of Italy and DASA of Germany, with both Russian and Japanese companies also involved, on the possibilities of an eventual joint venture.

At the same time, however, the US and European companies have also been pursuing their individual studies. The balance appears strongly to favour the US at present in terms of government financial involvement. Hundreds of millions of dollars have been, and still are being pumped into aeronautical research through NASA's own high-speed research programme, and by the leading engine and airframe manufacturers. There is no comparable coherent programme in Europe.

Concerned at this situation, the leading European manufacturers earlier this summer told their respective governments and the EU that some level of state and/or community input to help research into a Concorde successor was essential, so as to ensure that Europe did not fall behind the US. So far, however, there has been little sign of any such cash support. Any single SST-2 venture would also probably have to be global anyway, to ensure the widest spread of costs and the biggest possible market. Whether US anti-trust laws would permit such an alliance remains a significant query.

Demands for cash to finance the renewal of much of the existing ageing subsonic fleet are already heavy, and will escalate as traffic grows and fleet expansion becomes imperative. Lenders other than governments seem more likely to favour the procurement of a subsonic megajumbo, offering some guarantee of successful financial returns, than any SST-2 venture.

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AEROSPACE 8

Paul Betts looks at spaceflight

Satellites the top priority

On Sunday, July 20, 1969, US astronaut Neil Armstrong, commander of the spacecraft Apollo 11, became the first man to set foot on the moon. As he took his momentous first step he said: "That's one small step for man, one giant leap for mankind."

But 25 years later, the dizzy excitement of space exploration fuelled by the race in space between the US and Russia has been replaced by the more mundane worries of an industry fighting like many others for continued public and government support to help fund its future development and challenges.

Space has become a commercial enterprise, albeit a high-risk one, and many of its remarkable technological achievements are now taken for granted by a population more concerned about jobs and welfare than by new scientific discoveries and the prospect of human beings living and working in space one day.

"I find it rather sad to see around here a relatively small crowd of people. When I've been here in the past it was jam-packed," said a senior executive of the Anglo-French Matra Marconi Space group. He was speaking moments before the launch in July at Cape Kennedy in Florida of the US shuttle Columbia carrying an international space laboratory inside its cargo bay.

The launch was spectacular and successful. The shuttle was blasted into orbit in a great cloud of smoke for a 14-day mission when its seven crew, including Japan's first woman astronaut, conducted life science and other scientific microgravity experiments inside the \$1bn laboratory.

But it made little impact in the news. In the US, the big stories were the trial of a famous American football star, floods in Georgia, unemployment figures and the death of the North Korean leader. If the American newspapers relegated the mission to the inside pages of their newspapers, it was lucky to find even the

briefest of mentions in the European press. Only the Japanese covered the story in full, reflecting the presence on board the shuttle of the first Japanese woman in space and the determination of Japan to build up a strong presence in the space sector.

In Japan, the government space budget is continuing to rise while it is declining elsewhere. The latest victim of budgetary reappraisals in Europe is the Hermes project to build a European manned space vehicle. In the US, the National Aeronautics and Space Administration (NASA) is having to fight for funds every year and many of its space projects, especially the \$50bn space station due to be completed by 2002 and involving broad international collaboration, are living on a budgetary knife-edge.

With the emphasis now being placed increasingly on the commercial opportunities offered by space, governments, space agencies and manufacturers of space equipment have been concentrating on the satellite business, in particular for earth observation, meteorology and communications. Governments have also continued to show growing interest in satellites for military applications. The role played by satellites in the Gulf war has further boosted this interest.

In turn, competition in the satellite and satellite launch business has intensified. The commercial battle has essentially pitted the US against Europe. In the commercial satellite launch business, Europe has managed to build a leading position during the past 14 years with ArianeSpace and its Ariane rockets.

The French-led Ariane programme has done for the European space industry what the Airbus consortium has achieved in the civil aircraft field: the establishment of a credible competitor to the US dominance of commercial aerospace markets that lasted until the early 1980s. But although Ariane has now taken a share



Lift-off: 25 years after the moon landing, US space shuttle missions make little impact in news headlines

of more than 50 per cent of the commercial satellite launch market, it is facing tough competition not only from US launchers but also from Russia, China and Japan, all seeking to penetrate the western market.

With a finite market of around 20 commercial satellite launches a year, the battle for market share has provoked increasing international trade tensions mirroring those in the commercial aircraft market between the US and Europe. The US have accused the Europeans of subsidising its rocket launcher industry, while the Europeans have accused the Americans of cross-subsidising commercial launch operations with their large military satellite market, which to all intents remains closed to international competitors. And both the US and Europe have campaigned against price dumping for satellite launches by the Russians and the Chinese and sought to negotiate trade agreements with these countries.

Competition has been equally fierce in the satellite manufacturing side of the business. It has forced leading manufacturers to seek wider partnerships and has led to increasing consolidation in the industry. In Europe, two big transnational groups are being established to create the econ-

omies of scale necessary to compete in a tight market.

The French Matra group has already merged its satellite activities with those of the UK General Electric Company into a joint venture called Matra-Marconi Space, which is 51 per cent held by the French company. Matra-Marconi Space is now acquiring the space systems division of British Aerospace in a deal which would create a European space group with annual sales of more than \$1bn. At the same time, Deutsche Aerospace, the aerospace arm of the Daimler-Benz car group, is negotiating to merge its space operations with those of Aérospatiale, the French state-controlled aerospace company.

But if the prospects for the satellite business remain secure, even though it is likely to face increasingly competitive pressures, the future of manned space flights continues to be clouded with uncertainty. NASA officials concede that the fate of the US space shuttle will hinge on whether the US-led programme to build an international space station will survive or suffer from government budgetary cuts.

The \$30bn project is designed to create a permanent orbiting science institute in space capable of performing long-term

research in materials and life sciences in a gravity-free environment. NASA says that this fundamental research will accelerate breakthroughs in technology and engineering that will have practical applications on earth.

What governments must decide is whether they should continue supporting long-term fundamental scientific research and space exploration or simply go for short-term commercial pay backs, said one senior US space industry official.

The issue is now taking on, once again, an international political dimension. But in contrast to the race between the US and Russia 25 years ago when the two superpowers were competing to outmanoeuvre each other to take the leadership in space, they are now working increasingly together. NASA recently signed a \$400m contract with the Russian space agency to support a joint programme involving the US space shuttle and the Russian Mir space station. The contract also covers co-operation in the planned international space station.

This collaboration, which both sides see as consolidating the new post Cold War era, could prove to be the main driving force to keep alive the long-term ambitions of the international space industry.

Computers and teamwork cut development costs

Paper aeroplanes are looking dated

It is no surprise that spending by aerospace companies on computer-aided design, manufacturing and engineering software is such an important part of their capital investment, as it addresses key issues for the industry's future - "time to market" and global competitiveness.

The trend towards "paperless aircraft" and more efficient links with component suppliers is being driven by a need to reduce product development times through concurrent or simultaneous engineering. This requires a much greater sense of teamwork among different functions, and between suppliers and customers, supported by computers. Behind all this is the relentless drive to cut development costs.

According to Dataquest, the US-based market research concern, worldwide spending on Cad/Cam/Cae and GIS (Geographical Information Systems) software by the aerospace/missiles/and space vehicles sector was \$422.1m in 1992, accounting for 8.5 per cent of the total spent by industry.

The relevance of such software can be seen in programmes at all the main airframe manufacturers, civil or military. At McDonnell Douglas, which is one of the largest users of EDS Unigraphics software, the most modern fighter aircraft in the world, the F/A 18-B/F, is being designed using all the collaborative elements offered by a process called Electronic Product Development.

Unigraphics says that Northrop in California, GE Aircraft Engines in Cincinnati and McDonnell Douglas in St Louis are able to work as one team, sharing data, reviewing designs and programme plans on-line, while building a 3D model that can be verified and tested on screen, then manufactured in the knowledge that parts will fit.

Expensive physical mock-ups are therefore eliminated. Unigraphics says its target now is to allow airframe and engine

manufacturers to handle a digital model of up to 10,000 components effectively.

Where a "real" part is needed, the aerospace industry has taken quickly to the concept of "rapid prototyping". A process known as stereolithography is used to create a full-scale part, normally made out of plastic resin, from a three-dimensional Cad file. This saves weeks or even months on the traditional pattern-making process.

At the other end of the line, with the customers in the airline industry, there are programmes such as Intergraph's Veramis (Vehicle Repair and Maintenance Information System), used by KLM and Virgin Atlantic Airways.

This enables complete aircraft and aircraft sections to be visualised as intelligent three-dimensional computer images, and is said to be up to five times faster than manual repair registration systems.

A report about to be published by Dataquest analyses some of the trends influencing the purchase of Cad/Cam/Cae software, and the extent to which the aerospace industry has moved towards paperless design and production. Among them are:

■ The need to interchange information with suppliers and subcontractors. The capital cost and scale of operation involved with the design and manufacture of a complete new aircraft is prohibitive, it says, resulting in relatively few large organisations supplying a few customers using a high percentage of subcontracted parts.

"Changes to an aircraft design at any stage can ripple through the supply chain, causing many changes in the lower levels," says Dataquest. "Minor changes at lower levels can cause major problems with designs at higher levels. It is vital that information flow, even if restricted, is accurate."

■ Methods for information interchange. Low-level subcon-

tractors providing sub-assemblies to a rigid specification provide electronic information to their customers, usually on magnetic media. High-level companies require certification of design and sign-offs for designs. At present, these must usually be in paper format, forming legal documentation, backed up with electronic data.

The problems of security and the need for legal acceptance of designs are the key reasons for the continued use of paper-based information transfer. Electronic interchange is typically used for prototypes, working designs and intermittent information.

■ Importance of Cad for the design activity. The use of Cad/Cam/Cae tools is widespread, with high percentages of products being developed using them. The ability to model assemblies, interactive parts, and to test parts functionally are invaluable. Many systems can provide the specialist features and functions required by aerospace manufacturers.

■ Decision process to purchase new systems. The nature of aerospace developments has forced the development of customised systems, which must support many projects that may all be at different stages of their life cycle, and may be undertaken on an international basis. So in many aerospace companies, the purchase of design tools is part of a global IT strategy.

Another significant factor, says Dataquest, is the increasing importance of international consortia and joint development agreements, such as Airbus. "These approaches force commonality in the purchase of compatible systems that ripple through the supply chain, influencing the effectiveness and requirements for integrated product development."

* 1994 Focus Report. Discrete Manufacturing: Integrated Product Development. Details from Dataquest, tel 0494 422722.

Andrew Baxter

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David Fishlock

Down-to-earth



High profile: the screen above the pilot's left hand displays information received via the satcoms link

Michael Dempsey looks at satellite navigation

The sky's the limit

Transatlantic navigation has come a long way since Aloek and Brown crash-landed in an Irish bog after pioneering the route from Newfoundland to Europe in 1918. Passengers on a wide-bodied jet are confident about, precisely where and when they will arrive. But the huge fuel costs involved in long-haul aviation make any saving on time worthwhile. Airlines jostle for slots across the lucrative north Atlantic routes while pilots seek tailwinds that can chop precious minutes off the journey.

The objective is to boost profits by chipping away at fuel consumption figures. But the volume of traffic on the transatlantic route must maintain a strict separation. Without radar coverage crew rely on time to keep flights well apart. Safety dictates a 10-minute margin between aircraft. This prevents collisions but frustrates economy measures and extra flight slots.

Enter Automatic Dependent Surveillance (ADS). This project aims to provide an air traffic picture for the north Atlantic by mimicking radar data. Satellites are the key, taking signals from airlines and bouncing them back to a terrestrial control centre.

British Airways (BA) has been experimenting with satellite navigation since September 1992, using a Boeing 747 kitted out for ADS. This relies on Inmarsat navigation satellites to relay information to and from ground stations. Air traffic control (ATC) gets the exact position of the 747 within 12 seconds.

Radio contact with ATC entails a delay of up to 15 minutes before an aircraft is cleared to change its slot in pursuit of a favourable tailwind or to exit turbulence. ADS cuts this to 30 seconds. Dramatic cost benefits have been claimed on Pacific routes,

where United and Northwest Airlines use ADS. Northwest reckons annual savings of \$500,000 for each of its 50 Boeing 747s are attainable. United has the nickname Stealth Airline because its crews make so little use of radio signals.

Inmarsat's Fintan Ryan is adamant the ADS price tag of \$150,000 per aircraft is soon recouped. "The savings are proven on the Pacific route. ADS means the aircraft takes off and flies only the course that optimises costs," he says.

Over the north Atlantic ADS promises to halve the separation between flights, doubling the slots available. These developments offer improved exploitation of airspace. In the final approach, as the aircraft lines up to land, an international battle has broken out between satellite-based and terrestrial navigation aids.

Global positioning system (GPS) relies on a constellation of 24 satellites to measure the distance between the GPS receiver and the satellite. With three satellite signals it is possible to locate the position of the receiver anywhere on earth. GPS was originally developed for the US military and has spread rapidly throughout the civil sector. It offers a very cheap means of satellite navigation, with yachtsman's GPS sets now available for as little as \$350.

The GPS lobby claim their system is the answer to air navigation over developing countries and remote regions. However, pilots with leading carriers are happy with existing gyroscopes and laser-based navigation systems.

For landing, civil aircraft switch to Instrument Landing System (ILS) to co-ordinate their final approach to an airport. ILS relies on radio signals to guide the aircraft in. But encroaching signals from FM commercial radio stations

mean that ILS's days are numbered. The makers of GPS satellites and receivers, US avionics giant Rockwell, have spotted an opportunity.

"You see these massive markets in Russia and China opening up. They don't have a huge radar infrastructure. With GPS there is a tremendous advantage to be gained," says Ken Medlin, a Rockwell vice-president. There is also a lot of money on the table. The US Federal Aviation Authority (FAA) has commissioned a \$500m project to convert ILS approaches to GPS.

Mr Medlin and his colleagues argue that since GPS does not require a huge terrestrial infrastructure it is a cheap option. Unfortunately GPS is not yet suited to landing an aircraft in the worst weather conditions, known to pilots as Category 3. And Category 3 is a familiar state to crews landing in Europe. The UK Civil Aviation Authority has thrown its weight behind Microwave Landing Systems (MLS) to replace ILS by 1998. MLS uses proven microwave beam technology to guide an aircraft down in fog. Despite the US FAA's endorsement, the CAA rejects GPS as "not yet fully proven" for precision guidance.

Suspensions about the reliability of GPS are compounded by the fact that GPS satellites are controlled by the Pentagon. By contrast, Inmarsat answers to a 74-nation consortium. An accord between the US military and the FAA over civil use of GPS has failed to quell European suspicions.

Even if the military agree not to scramble or break signals in time of conflict, how can operators be sure of future tariffs? Satellites have a finite life, and European airlines are convinced that the GPS community will seize on a chance to recoup the vast military investment.

David Fishlock discusses new materials

Down-to-earth research

Daniel Goldin, administrator of the US National Aeronautics and Space Administration, interviewed last spring by the FT, stressed that aeronautics, and spin-off from space research for the civil aircraft industry, would be given greater emphasis in NASA's \$14.5bn research and development budget.

Aeronautics, although named first, has played the subsidiary role ever since cancellation of research funds for the titanium Supersonic Transport (SST) nearly quarter of a century ago. Now, NASA has joint programmes with the US aircraft industry on both supersonic and advanced subsonic airliners expected to enter service early in the next century. New materials are one of the main R&D goals.

NASA's European counterpart, the European Space Agency, is no less concerned to bring more of its technology nearer the ground. Its technology transfer initiative, run by SpaceLink Europe, a consortium of technology brokers, has identified no fewer than 170 opportunities for transfer, among them advanced materials for heat resistance, lubrication, sensors and stiff lightweight structures.

Earlier this year, one of Europe's most spectacular packages of advanced materials, the Rolls-Royce Trent engine for Airbus A330, was certified on schedule. The Trent is the most powerful engine Rolls-Royce has ever built. Its makers claim it is significantly lighter than competing US engines and runs at lower peak temperatures, while they remain confident it can be pushed to 100,000 lbs thrust.

But Rolls-Royce has been at the forefront of those urging government to recognise the profound importance of advanced engineering materials to Britain as a manufacturing nation. The US subsidises aerospace materials development through both NASA and the Department of Defense.

Germany, in July, announced a new £500m subsidy for research to help its aerospace industry meet US and Japanese competition. The Japanese have long supported national programmes in such sectors as engineering ceramics, where many believe they lead the world.

For Britain, the real purpose of the now-defunct Hotol project was as a test-bed demonstrator for advanced materials development that would push engines way beyond the Trent. Not only have UK engineers lost this opportunity, but they face further cuts in materials R&D through the underfunding to axe defence R&D by another \$30m-\$50m a year. Moreover, two major UK sources of carbon fibre composites and other advanced aerospace materials, ICI and Courtauld, have both abandoned the field.

A more positive step is the appointment of an internationally renowned materials scientist as chief executive of the new Engineering and Physical Sciences Research Council. Richard Brook was Cookson Professor of materials science and head of Oxford University's department of materials science. His speciality is engineering ceramics.

Recognition that better materials are the key to higher performance in every sector of engineering has slowly been gaining ground among decision-makers. A report from the UK government's Advisory Council on Science and Technology (Acost) in 1992, reviewing advanced engineering materials, concluded that "with a few notable exceptions, the UK science and technology base in these materials is weak. The level of R&D is low, and the effort is spread too thinly." Among Acost's recommendations were that the government should consider launching "substantial demonstrator programmes" - particularly in the aerospace and automotive sectors.

Prof Brook believes that, over the past two decades,

R&D has yielded "enormous advances" in the properties of engineering ceramics. If harnessed, such advances should translate into lighter engines that can be run at higher temperatures. So far, they have not, and Prof Brook identifies three reasons:

1. Engineering ceramics are still too costly, and although it is believed that economies of scale would cut their costs the question remains: who is to pay for the build-up in scale?
2. The vigour with which established materials - such as superalloys - react to any threat from competing materials, and
3. "The residual distaste of engineers for brittle behaviour", plus the fact that the fracture toughness of ceramic materials can still be a problem for many potential users.

As a result, "research progress has not always brought the rewards that were foreseen," says Prof Brook. Nevertheless, he identifies another three factors that give him considerable encouragement:

1. An excellent base has now been established for systematic advance. He cites the way the Japanese are using this base as the launchpad for their synergy ceramics R&D programme, a 10-year commitment involving ¥100bn.
2. He sees merit in focusing on applications, where ceramics "can deliver a function that simply cannot be provided by other materials," such as the newly-discovered "high-temperature" superconductors, where success would drag other applications along in its wake.
3. Those who have been least successful in their pursuit of advanced ceramic materials have been the loudest critics lately. "The fact remains that a modern industrial nation looking for technological advance will be better placed if it can operate with full competence over the entire portfolio of materials - ceramics, metals and polymers."

AIRPORT DEVELOPMENT

Big spenders await the rush

With world air passenger traffic rising by 5 per cent a year, the current annual passenger total of 1.25bn is expected to double by the early years of the next century.

The air transport industry is gearing itself to meet this growth. Airlines are gradually restructuring to improve their operational and financial performance; manufacturers are building ever-larger aircraft; and airports are increasing their own capacity.

More than 300 substantial airport modernisation and expansion schemes are under way. They include new airports on land reclaimed from the sea, as at Kansai, in Osaka Bay, Japan, and at Chek Lap Kok, off Lantau Island, Hong Kong; the near-£1bn proposed Terminal Five at London's Heathrow; and the comparatively simple but nonetheless vital smaller restructurings, such as the £21m redevelopment at Southampton Eastleigh, also in the UK.

The International Civil Aviation Organisation, the aviation agency of the United Nations, suggests that the cost of all this work is likely to be \$240bn over the next 10 years.

But this covers only the direct airport development costs - work being done inside airport boundaries on terminals, runways and associated roads, and items of internal equipment such as information systems, security systems, passenger amenities and fire and rescue equipment.

It does not include the massive associated infrastructure costs outside, which are just as necessary to enable airports to function smoothly. These include road and rail links with adjacent cities (for example, the £300m direct rail link

between Paddington station in central London and Heathrow airport), and the big investments needed in air traffic control (ATC) facilities (such as the £350m new en route ATC centre being built at Fareham, Hampshire, by the Civil Aviation Authority for the UK National Air Traffic Services).

If these outlays are also included, overall airport and associated infrastructure costs over the next decade could rise to at least \$400bn.

Oris Dunham, director-general of Airports Council International, an independent non-profit body representing more than 420 international airports in 139 countries, points out that keeping up the momentum of airport development

will require the co-operation of all elements of the air transport system.

He suggests that there are four principal challenges: finding physical space for the developments; finding the money; political considerations; and increasing environmental concerns.

The first is already serious: breaking out of existing airport boundaries to undertake new terminal or runway development is difficult for many reasons, especially environmental constraints; and most airport authorities find they have to squeeze new terminals out of existing space, meeting the increased pressures by improved operational procedures. This is why some

authorities - in Japan, Hong Kong and Macao - have opted for the offshore airport approach, although such solutions are available in few places.

The financial problem is just as difficult. While some of the money can be derived from an airport's own activities - such as the expanding retailing ventures by the British Airports Authority - in many cases, it must come from either governments or the capital markets. An improvement in financial management and operational efficiency by airport authorities can do much to help secure outside investors' funds, without risking counter-productive increases in tariffs for airlines and passengers.

The political problems stem from governments' need to recognise that the air transport industry is a generator of economic growth, and not to be regarded as a cash-cow for national treasuries and subjected to penal taxation.

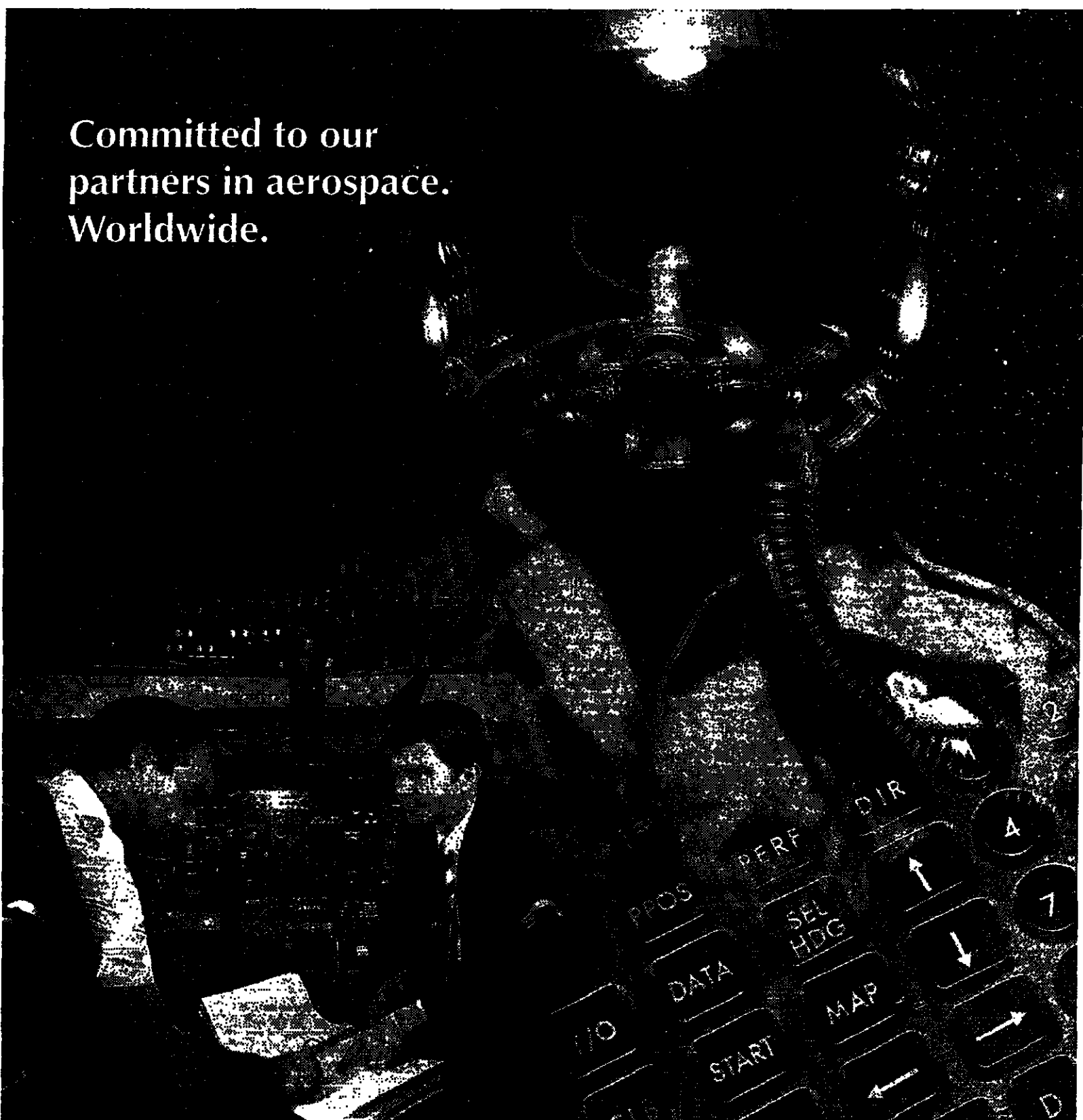
The international Air Transport Action Group, representing airlines, aircraft manufacturers, tourist bodies and other organisations involved in air transport, is already doing much to stimulate governments to do more for aviation. It points out that every 1m passengers passing through an airport generate between 2,500 and 8,000 jobs, (depending upon airport size) and a financial benefit to the local and national economy of between \$130m and \$160m.

In other words, growth in air transport drives economic progress, and in turn benefits from it. Taxing air transport (such as through passenger departure taxes) can only be acceptable to the industry if the money is fed back into the development of the air transport infrastructure, but not if it is used as just another means of raising revenues for non-aviation purposes.

The environmental challenge is likely to become even more severe. Much has already been done to reduce aircraft noise and emission levels, but it seems likely that more stringent regulations will be imposed in the next few years. It also seems certain that existing night-noise curfews will in most places become more restrictive, so that the burden of an increasing number of flights will have to be met by increased efficiency in handling during daylight.

This will in turn affect other elements of the overall system - with pressure for faster handling of passengers through airports, improved access to airports by road and rail, the use of larger aircraft, and tougher air traffic controls.

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AEROSPACE 10

WORLD MARKETS

The recovery in the US is tentative, says Frank McGurty

Hopes for stability

At the end of July, McDonnell Douglas, the world's largest manufacturer of military aircraft, put its competitors on notice that it had no intention of leaving the commercial end of the business, despite its withering share of a shrinking market.

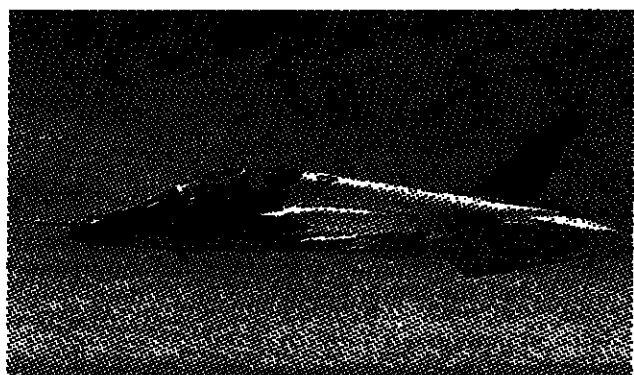
The St Louis-based company announced that it would offer its customers a new 100-seat passenger jet known as the MD-95, taking the first step towards full-scale production of the short-haul jetliner. By diversifying its civilian product range, McDonnell Douglas hopes to begin reversing a decline that has seen its commercial production rate shrivel by 75 per cent in just three years.

The decision to proceed with the MD-95 is a good illustration of how the US aerospace industry as a whole is struggling to cope with a severe cyclical downturn which began in 1990. Last year, the net rate of orders for all manufacturers - defined as new orders minus cancellations - reached a 20-year low, while the US industry's total workforce sank 32 per cent below its peak of 1.33m, reached in 1989.

In terms of orders, a tentative recovery appears to be under way. In terms of deliveries, the numbers are only now touching bottom. In 1995, production is expected to stabilise at this year's projected level of 465 aircraft - down from 844 three years ago, according to Moody's Investors Service.

Boeing, which still commands a dominant 63 per cent of the commercial market, projects its 1993 deliveries at 260, well below its 1992 level of 442. McDonnell Douglas, the US aerospace group hardest hit by the contraction, is well aware that it can no longer count on the Pentagon to help offset downcycles on the civilian side.

The easing of international tensions in the 1990s, coupled with stepped-up political pressure to cut the massive US budget deficit, have all but assured that the bounty reaped



T-45A Hawk McDonnell Douglas is the largest military aircraft producer

during the Reagan military build-up will never return.

Indeed, the Clinton administration has accelerated the timetable for a downsizing process which began at the end of the cold war. It projects the Defense Department's outlays at \$233.7bn in fiscal 1997, nearly 21 per cent lower than the high-water mark reached in fiscal 1988. By contrast, the final Bush projection for fiscal 1997 was a relatively hefty \$232.7bn.

The response of the aerospace industry to this unprecedented challenge is well documented. A wave of market-driven consolidation has swept over the industry since 1991, forcing companies either to seek a leading position in a particular segment through acquisitions, or to sell off their marginal operations to a competitor seeking to do the same.

Some companies, such as Lockheed and Martin Marietta, have become aggressive buyers, while General Dynamics, General Electric and others have sought to limit their exposures to shrinking military allocations.

The latest twist in the industry's reshaping came in April, when Northrop won a month-long bidding war with Martin Marietta to acquire Grumman, a Long Island group specialising in defence electronics. The move, which carried a \$2.17bn price-tag, was seen as a last-ditch effort by Northrop to thwart the possibility of its

own takeover.

By and large, defence contractors assured their continuing profitability by reshuffling the business portfolios. McDonnell Douglas, which has stayed out of the fray, is an exception. Still, its defence business remains on solid footing. The division, which makes the F/A-18 and F-15 fighter jets, as well as the controversial C-17 transport, recently posted record operating earnings for the three months to the end of June.

On the commercial side, its position is decidedly more precarious, with production plunging to 48 aircraft last year, from 169 in 1991. Prudent cost-cutting has enabled the business to remain marginally profitable, however.

The announcement of a \$20m order from Sandia, the state-run carrier of Sandia Arabia, this spring was timely. Its factories at Long Beach, California, are steadily whittling down the backlog of unfilled orders for its larger three-engine MD-11 jetliner and modern versions of its venerable DC-9. (The lion's share of the Saudi order - 46 aircraft worth \$40m - went to Boeing.)

The new MC-95 is a variant which fits into a crucial market niche. With US carriers emulating the success of Southwest Airlines and other profitable operators, many of them are likely to scrap their hub-and-spoke flight networks in favour of point-to-point fly-

ing. It is a strategy sure to accelerate orders of smaller aircraft, with 100 seats or less.

The conundrum facing McDonnell, however, is that the market has been flooded with new aircraft over the past five years, at a time when world air capacity has expanded twice as fast as traffic. The result is a huge stockpile of used aircraft waiting to be put back into service when demand picks up. To make matters worse, air traffic is expected to recover more slowly than in past cycles, with slow economic growth forecast for the late 1990s.

As a consequence, Moody's expects a 22 per cent increase in annual aircraft deliveries from 1993 to 2002. Though that level of growth appears to be sufficient, an unprecedented number of aircraft programs will compete for a piece of the pie.

The most promising - and most risky - of these programmes is Boeing's B-777, the largest twin-engine airplane ever built. The 400-seat wide-body, which cost \$4.5bn to develop, is scheduled to begin commercial flights next May.

"The question is, will everything go as planned," says Mr Jack Modzelewski, an analyst with PaineWebber, the New York securities house. "If the planes don't ship, Boeing may have a few billion dollars worth of inventories stacking up very fast."

About 145 of the flying behemoths, at \$35m each, are already on the order books, but the Seattle aerospace giant needs twice as many to recoup its investment. To encourage demand, Boeing has requested US regulators to allow the aircraft, which initially will have a range of 4,600 miles, to fly over the oceans immediately, without the normal trial period over land. The waiver has raised heated opposition.

The world's biggest aerospace group can ill afford a setback. Net income in the second quarter was down 48 per cent from the 1993 period, and would have come in lower if not for an unexpected tax break. For the year, revenues are expected to reach \$21bn, about a third of the 1993 level.

Mr Modzelewski, among others, doubts whether its annual orders will return to the 400-plane level before the turn of the century.

Fare wars blight the scene for airlines in the US, says Richard Tomkins

Unprecedented turmoil

More than 15 years have passed since deregulation opened the skies above the US to the unrestrained forces of enterprise and competition. By now, the airline industry should have settled down into some kind of equilibrium. Instead, it is in unprecedented turmoil.

Barely a week passes without news of another fare war breaking out, an airline delivering a warning of impending losses, or thousands of jobs being cut. In the past four years, the US airline industry has lost nearly \$13bn - more than all the money it has ever made since the invention of powered flight.

So what has gone wrong? It is not as though the airlines are short of passengers: last year the number of people carried by US airlines on domestic and international flights rose by 2.6 per cent to a record 487.2m. The trouble is, the big airlines cannot charge a fare high enough to carry them at a profit - and that is because a new breed of low-cost airlines has emerged.

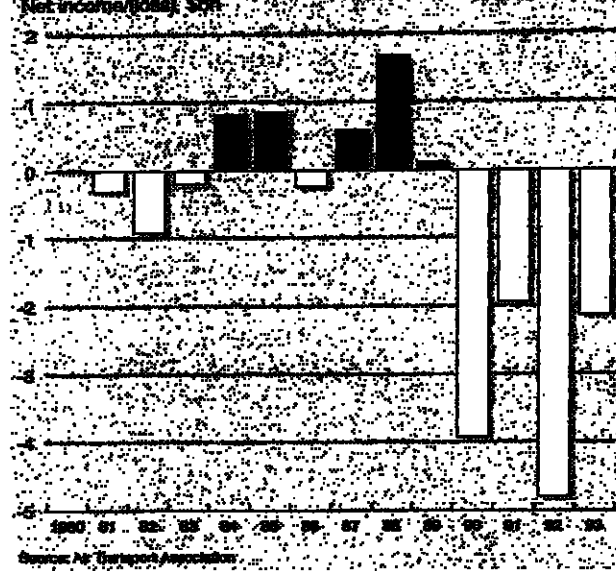
Competition from upstart operators is nothing new to the US. When air deregulation came in 1978, many entrepreneurs thought they saw an opportunity to make a profit by starting new services or undercutting fares on existing routes. But almost as many were wrong: as the big carriers fought back and the competition intensified, scores of airlines went bankrupt, most of them small.

The economic boom of the late 1980s brought respite for the industry, but it was not to last. With the onset of the Gulf War at the beginning of 1991, passenger demand sagged, and airlines were burdened with surplus capacity. This provided entrepreneurs with an opportunity to pick up assets and staff on the cheap and make another onslaught on the established carriers.

This time, however, the entrepreneurs were better prepared. For one thing, they had learned from the mistakes of their predecessors; for another, many were experienced airline employees pensioned off by the big carriers. Still more important, they had

US scheduled airlines

Net income/loss \$m



Source: US Department of Transportation

a successful model from which to work - that of Southwest Airlines, the phenomenally successful Texas-based carrier.

Today, Southwest is by far the most profitable airline in the US and the one that all carriers, big and small, seek to emulate. It succeeds because its costs are so much lower than those of the established airlines. The result is that it can charge permanently low fares on every flight and win more passengers - not just from other airlines, but by encouraging people to fly instead of driving, and by generating demand for travel that would not otherwise exist.

How does Southwest do it? Unlike the big airlines with their hub-and-spoke operations, Southwest specialises in short-haul, point-to-point services with frequent flights and fast turnarounds that make intensive use of its staff and aircraft. Its hard-working and enthusiastic employees are much more flexible than those working for the big carriers: flight attendants, for example, clean the passenger cabin while people disembark. And there are few frills: accommodation is all economy class, there are no pre-assigned seats, and the in-flight meal is a soft drink

and a bag of nuts.

Translated into financial terms, the result is that Southwest, and airlines like it, have operating costs of little more than 7 cents per available seat mile, while the big carriers have operating costs averaging rather more than 9 cents a seat mile - nearly 30 per cent higher. So when the big carriers have to lower fares to compete with smaller carriers muscling in on their routes, they lose money.

Faced with the certainty that the small carriers are not going to go away, the big carriers have been left with no choice but to bring their own cost structures down. The effect has been a rash of radical restructurings.

Perhaps the most spectacular is the one now being implemented by United Airlines, the biggest US carrier. In July, its shareholders voted to accept a plan thrashed out by its management and workforce under which employees will be given a 55 per cent controlling stake in the airline in exchange for wage cuts and changes in working practices worth \$4.9bn to the company over the next 12 years.

United is not the only big US airline to have offered employees a stake in the company in

return for labour concessions. Northwest Airlines narrowly avoided bankruptcy in the middle of last year by persuading employees to yield \$386m worth of concessions over three years in return for 33 per cent of its equity (now 28 per cent following a stock offering in March). And last year Trans World Airlines emerged from bankruptcy after trading 45 per cent of its shares for \$660m worth of employee concessions over three years.

The advantage of employee buy-outs like these is that, in heavily unionised airlines, they produce labour savings without the strife that might accompany swinging job cuts. The largely non-union Delta Air Lines, however, has adopted a different strategy: in April it announced that it was cutting up to 15,000 jobs from its world-wide workforce of 73,000 as part of a plan to cut \$20m a year from operating costs by mid-1997.

Soon after Delta's announcement, USAir announced that it was seeking to cut costs by \$10m a year over the next three years, with half the costs coming from efficiency improvements and the other half coming out of labour costs. USAir, however, is unionised, and it is still in talks with its unions about how the labour cost savings are to be achieved.

Meanwhile, Continental Airlines, which last year emerged from its second bankruptcy with a largely non-union workforce, has reacted to the competition by setting up its own low-cost, low-fare operation - nicknamed CALite within the industry. United, with its new cost structure now in place, is planning to do the same with the launch of United Shuttle next month.

If one thing is certain about these changes, it is that they not over yet. Indeed, it seems probable that worse is to come. The big carriers cannot continue indefinitely to absorb the losses they are suffering in the fare wars afflicting the market. As the competitive pressures intensify, only those that succeed in adapting to the low-cost environment will survive.

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Japan: Michio Nakamoto explains the importance of the YSX project

Taking the partnership route

Officials, researchers and financiers of the Japanese aerospace industry were today gathering for a meeting that has become an annual ceremony - to discuss whether the country should once again seek a place in the world commercial aircraft industry.

At issue will be a plan to build a small passenger aeroplane, the YSX, which the industry and its guardians at Miti - the ministry of international trade and industry - have been nurturing for the past five years. Although still just a vision in the eyes of planners and manufacturers, the YSX has already caught the Japanese public's imagination.

The interest shown in the aircraft is understandable, given the traditional Japanese fondness for national projects and symbols of industrial might. But the YSX is not just a symbol of Japan's resolve to establish its credibility within the industry. It is the third attempt by some of the country's most highly regarded manufacturers to build and market an aircraft on a commercial basis, and the stakes are high.

For the bureaucrats at Miti who are backing the project, it is not just a question of pride, although that, too, is important. Unlike some of the more shining examples of Japan's manufacturing prowess, the aerospace industry, despite good intentions and recognised skills, has been something of a blemish on the country's industrial record.

The ministry, more famous for its successes in industrial planning than its failures, is expected to increase the amount of money available to the project next year to ¥1.1bn, which will cover the costs of a feasibility study that has been carried out since 1989. The increase from ¥550m this year, at a time when government coffers have been reduced by one of the longest recessions since the war, represents a strengthened commitment to a project that could lose millions and create another blemish on its record.

For the five leading Japanese



Maintenance work: a Japan Airlines technician inspects an engine

aerospace manufacturers participating in the YSX programme, the risks are also daunting.

"The initial development costs for commercial aircraft are extremely high, and it takes about 10 years to make profits, so we have to be cautious," emphasises Mr Yutaka Hino, general manager of MHI's aerospace and special vehicle headquarters. "It is not going to be easy."

In the past, the industry has had little joy in its attempts to develop and market commercial aircraft. The only two designed and built in Japan - a 64-seat twin-propeller airliner called the YS-11 and a short take-off and landing plane called Asuka - have been embarrassing commercial failures.

Manufacturers, however, claim that it is not for lack of technical ability that the industry has lagged behind those in the US and Europe. Japanese technical capabilities have been tested through the substantial amount of subcontracting work they have done for Boeing and McDonnell Douglas, and on joint development projects with Boeing, such as the 777 and 787.

The latter, in particular, provided Japanese companies with experience in building the aircraft's body. "At first, Japa-

nese companies did not have any speciality, but after the Boeing 767, Japanese companies are probably good at body work," claims Mr Hino.

He believes that the real stumbling blocks to the growth of Japan's aerospace industry have been a domestic market that is too small to support a leading industry, and the ban on Japanese exports of defence products.

But additionally, there is the bitter truth which the YS-11 fiasco - it went out of production in 1972 after 12 years, because it was unprofitable - taught both the industry and Miti: the Japanese industry lacks the marketing expertise and the credibility needed to sell commercial aircraft globally.

Although the YS-11 was actually respected as an aircraft, industry officials explain, nobody was willing to take the risk of buying expensive planes from Japanese manufacturers, which had no established record.

To avoid the same mistake, the industry and Miti have consented to have a western partner on their next endeavour, the YSX. "We have to team up with an established partner, like Boeing or Airbus, to sell the plane, because we don't have the marketing ability and need to provide after-

sales services," concedes Mr Hino.

The latest indications are that the preferred partner is Boeing, with which the Japanese aerospace industry has a long relationship. But the question facing the industry then would be whether it could shed the junior-partner role it has always been relegated to in its dealings with the US company.

The inability of Japanese aerospace companies to win more than medium-technology work from Boeing - such as wing-flaps - has earned the industry a reputation as a permanent subcontractor to the US company. An attempt was made to play a more prominent role in the development of Boeing's 777 jet by taking a 21 per cent stake in the project. However, even MHI, the leading Japanese company in the industry, admits that there is a long way to go before the industry can claim partnership with Boeing.

"We see it as joint development, but others say it is subcontracting," concedes Mr Hino. "Japanese companies will only be able to increase their share of a project by improving their labour capabilities, facilities and technology."

For example, Boeing has always kept work on the main wings largely to itself. Wing work needs large-scale manufacturing capacity, which does not exist in Japan, he explains. Even if the Japanese industry manages to take the lead in a commercial venture, it is likely to face fierce competition on the global market, where there are several other projects to develop a small passenger jet.

For the industry, and for Miti, there are few options. "The project is unlikely to go ahead if it appears that it won't be profitable," says an official at the ministry.

Yet the country's defence budget, where the industry derives 75 per cent of sales, is shrinking, and industry and government agree that aerospace manufacturing must be retained for the technological skills that it generates for a variety of industries.

When a Russian-built Tupolev aircraft, of China Northwest Airlines, crashed near the historic city of Xian in June, it was not only China's worst air disaster, it also coincided with festering doubts about Beijing's ability to manage its flourishing aviation sector.

An appalling safety record - more than 500 people have died in air crashes since 1982 - had turned the spotlight on lax safety standards, poor maintenance, sloppy cabin service and virtually non-existent airport security. In the past year or so, there have been no fewer than a dozen hijackings to Taiwan of Chinese airlines.

Since the appointment late last year of Mr Chen Guangyi as head of the Civil Aviation Administration of China (CAAC), the country's aviation regulatory arm, efforts have intensified to improve safety; but foreign airline representatives say that China has a long way to go before it can hope to match international standards.

China's aviation sector simply has grown too fast for available resources: pilot training, for example, is lagging well behind demand. Among the most critical problems is a lack of experienced pilots.

China is moving to redress the problem, in co-operation with foreign airlines such as Lufthansa which has agreed to train Chinese pilots at its facility in Phoenix, Arizona; but demand is such that it will take years to provide an adequate supply of pilots.

Growth figures for the aviation sector are staggering. Passenger numbers are rising at an average of 20 per cent annually, and this is expected to continue for the next few years; although a credit squeeze slowed the increase last year to 16.8 per cent from

CHINA

Anxiety over safety record

33 per cent the year before.

Projected Chinese purchases of passenger aircraft should be enough to keep Airbus Industries and Boeing in business well into next century. In a study, for an Air Finance conference, Chase Manhattan Bank predicts China's passenger fleet of 350 aircraft will increase fivefold by 2010. This would require the purchase of 1,200 new aircraft worth US\$90bn.

Chase's prediction compares with less optimistic forecasts by, among others, Boeing which predicts purchases of 800 aircraft and expenditure of US\$40bn. Airbus expects China to purchase 620 new aircraft in the next 15 years.

Regardless of who is correct, numbers of aircraft and amounts of money involved are colossal. Growth in the civil aviation fleet since China began opening to the world in the late 1970s has been spectacular. In 1974, China had just 12 passenger aircraft, compared with the 350 today.

Boeing, followed by Airbus and McDonnell Douglas, have been the chief beneficiaries. Boeing delivered 46 airliners to China last year - 14 per cent of its production. This year, it expects to deliver 38, or 14 per cent of a lower production. Negotiations are already well advanced for the purchase of a further 50 Boeings, including the new 777 two-en-

gined widebody, at a cost of about US\$5bn.

Airbus, too, is making a stronger showing in the China market. The European consortium secured orders last year worth US\$1.2bn. Three airlines - China Eastern in Shanghai, China Northwest in Xian and China Northern in Shenyang - are now operating Airbus.

Other suppliers of aviation equipment are also benefiting from China's aviation expansion. Rolls-Royce, for example, is supplying 42 of its RB211-535 engines for Boeing 757s on order by Chinese airlines and is expecting further orders.

While China is spending billions of dollars on the purchase of new top-of-the-range aircraft, it is far from maximising returns on investment. The Chase Manhattan study reported that China's average aircraft utilisation rate was 5.2 hours a day in 1992, up from 4.7 the year before. This compares with 11 for Singapore Airlines.

Among factors curtailing utilisation is the primitive state of Chinese infrastructure, including airports and air traffic control systems. Only 40 of China's airports have instrument-landing systems, which means that bad weather often causes delays, and thus disruption to the entire network.

A striking feature has been the proliferation of new

regional operators. China now has more than 30 airlines. This regionalisation of the aviation sector has placed a huge burden on CAAC's overstretched regulatory abilities. On the other hand, the growth of regional carriers has added a dynamic to the sector which would not have been possible if the CAAC monopoly had been maintained.

The regional airlines are also spreading their wings beyond China, opening routes to international destinations such as Singapore and Thailand. Several are seeking capital abroad, to fund ambitious expansion plans. China Southern, based in Guangzhou, and China Eastern are among 22 Chinese companies approved for listing on overseas stock markets.

In its efforts to secure expertise and capital, China recently announced it was opening its airline industry to foreign investment, though foreign involvement in a mainland airline would be restricted to 35 per cent with voting rights capped at 25 per cent.

Foreign investors were also being urged to invest in airport facilities such as terminals, ground-handling and aircraft maintenance. Indeed, foreign carriers are already becoming more involved.

British Airways recently formed a joint engineering venture with China Southern. Lufthansa has a joint venture maintenance facility in Beijing with Air China; and Singapore Airlines has concluded a joint-venture agreement with the Beijing Airport Authority for inflight kitchen services and ground handling facilities.

China's aviation sector is in flux, and the learning curve is proving to be steep.

Tony Walker

Russia: morale is low and the outlook bleak, writes Leyla Boulton

The pains of privatisation

After a difficult year of adjustment to market economics, the future looks bleak for Russia's aerospace and airline industries.

Despite having some of the best design capacity in the world, manufacturers are finding it difficult to raise the finance they need to produce and sell aircraft in world markets. The once-monotheistic Russian airline industry, having split up into some 300 mini-carriers, has been hit by two serious accidents, which have dented already shaky international confidence in it.

After prolonged indecision over the future of Russian International Airlines - the international ramp of the former monopoly, which continues to use the Aeroflot name - the government decided in June to sell 49 per cent to the airline's employees.

In this first stage of privatisation, employees will be barred from an unspecified period from re-selling their stock, which they will be offered at a discount. The government does not plan to sell off any of its remaining 51 per cent stake for at least three years.

"In the next stage, I think conditions for foreign capital to invest will be created," Mr Igor Desyatichenko, deputy director for finance, was quoted as saying in a recent interview. In the meantime, the government has promised to give the dividends of its 51

per cent stake to the airline, to help it acquire new aircraft.

But a question-mark remains over whether it will remain a single airline, following the decision to allow four of its subsidiaries the option of breaking away as separate companies. This decision coincided with a change of chairman at Russian International Airlines, with the replacement of Mr Vladimir Potapov, who had struggled to keep the airline whole, by one of his deputies, Mr Vladimir Tikhonov.

The declared purpose of privatisation is to make the industry more efficient. But the collapse of the Soviet Union, in December 1991, only complicated its adjustment to market reforms launched just over two years ago. Newly-independent republics, as well as restless regions and even cities, seized control of locally-based fleets. But despite the lifting of controls on ticket prices, as part of the reforms, most of the so-called "baby Aeroflots" lack the muscle and expertise to achieve international standards and re-equip ageing fleets.

In January, a Tupolev aircraft operated by a tiny Siberian offshoot of the former Aeroflot crashed en route from the Siberian city of Irkutsk to Moscow, killing all 120 people on board. Moral and discipline have also suffered across the board. In March, 75 people died when an Airbus leased by Russian International Airlines

crashed on a flight from Moscow to Hong Kong. Unofficial reports released at the time suggested that the pilot had been teaching his children how to fly. But publication of the results of an official inquiry have been postponed several times, fuelling suspicions of an attempted cover-up.

A bright spot amid the chaos is the development of a few privately-funded airlines, such as Transaero, which offers western-style service at a small premium to that of its state-owned rivals.

Pending state-owned airlines' inevitable restructuring as bigger companies, the government this spring made a start with privatisation when it auctioned part of Vnukovo Airlines, based at Moscow's domestic Vnukovo airport.

Until July 1, privatisation of state-owned assets had been conducted through the free distribution of vouchers to the population. However, future privatisation, including that of Russian International Airlines, will be for cash only, with 51 per cent of the proceeds due to be ploughed back into companies.

Lack of finance to re-equip fleets is the main problem facing Russian airlines, and is likely to remain so even after privatisation. It is also an obstacle for aircraft manufacturers, which were previously run and financed by the state.

Even those airlines which have some money are finding

it easier to lease or buy western aircraft, because of the favourable financing terms offered by western manufacturers. A cash-strapped government has yet to implement a long-promised industrial policy of selective support for its most promising industries, such as aerospace manufacturing.

In the meantime, two engine-manufacturers have teamed up with two leading Russian aircraft manufacturers in an attempt to mass-produce Russian aircraft with western engines and avionics. The most advanced project is an alliance between Russia's Ilyushin and Pratt & Whitney of the US. Their long-haul IL-96-M aircraft is currently undergoing tests for certification in Russia and the west. A similar aircraft, with Russian engines, the IL-96-300, is already being operated by Russian International Airlines on routes to the US.

A separate alliance, between Russia's Tupolev, and Rolls-Royce of the UK, wants to produce the medium-haul Tu-204 with western engines and avionics. But it is still said to be seeking finance for certification procedures. According to Mr John Sherman, executive director of Spectrum Capital, the UK venture capital company, the Russian authorities have approached the British government for help in raising \$20m for this purpose, on the grounds that this will help Rolls-Royce to sell engines.

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AEROSPACE 12

UK aerospace industry is pressing the government to adopt a new strategic initiative, to guarantee the future of the industry at a time when it is continuing to lose market share.

Although companies have continued to restructure and consolidate their operations through partnerships and alliances with international groups, they warn that the sector's future will depend on a political consensus around a clearly stated public policy of support for the industry.

In a written submission to the House of Commons trade and industry select committee, the Society of British Aerospace Companies (SBAC), the trade association grouping more than 200 UK aerospace companies, said that the government, in addition to providing a stable long-term investment climate, needed to develop with the industry "a national technological strategy to make greater progress in maximising the efficient use of investment resources from private and public sources."

The call for greater government commitment comes at a time when UK aerospace companies are continuing to face the effects of the prolonged recession in the civil aircraft business and the decline in government defence following the end of the cold war.

Until recently, the UK aerospace industry was second only in size to that of the US among western economies. But after peaking in 1990, its annual turnover has declined from £11.7bn four years ago to

around £10.4bn. The impact of lower defence budgets has led to a marked change in the civil-military split, with civil activities now accounting for around 50 per cent of total annual turnover compared with only 25 per cent in 1980. Over the past 12 years, restructuring has led to a decline in employment, from nearly 230,000 people in 1980 to fewer than 150,000 last year.

Other aerospace industries in Europe have fared better than the UK in terms of government support. By 1990, the annual turnover of the French industry had begun to match the UK, with France maintaining a stronger level of defence spending as well as adopting an active policy of backing what it considers a strategic industrial sector. The German industry has enjoyed even greater government support.

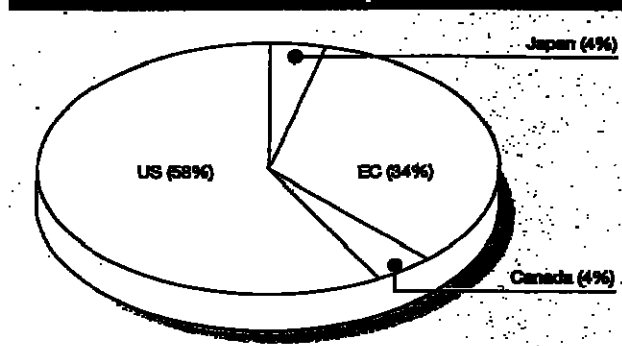
Fierce competitive pressures, coupled with the growing costs of research and product development, have forced the UK industry - which is still second to chemicals in the UK trade balance league, exporting about 70 per cent of its turnover - to step up efforts to rationalise by forging new international partnerships, as well as shedding certain assets to focus on core activities.

British Aerospace (BAe) has pursued its vigorous rationalisation and recovery strategy of returning the company to its basic defence and civil aerospace businesses. On the civil side, BAe is continuing to seek international partnerships for both its turbopropeller and regional jet operations.

The UK's position as a global participant is at risk, says Paul Betts

Industry seeks political help

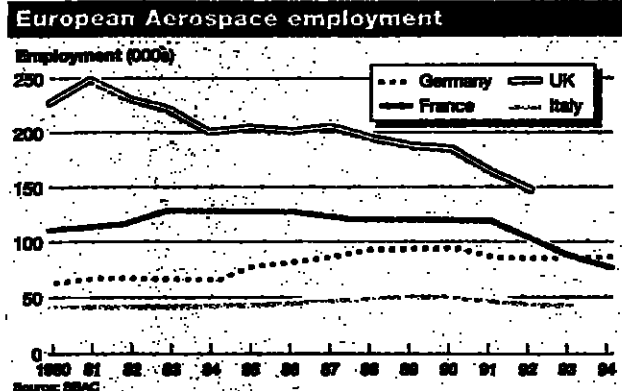
Share of the world Aerospace market 1991



Source: SBAC

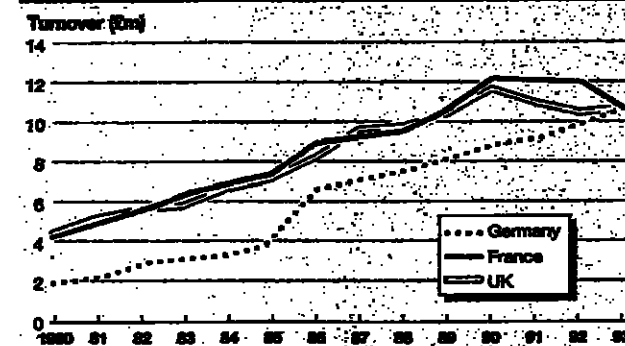
After failing to form a joint regional jet venture with Taiwan last year, the UK group has pinned its hopes on forming a regional jet alliance with Fokker, the Dutch manufacturer now controlled by Deutsche Aerospace of Germany. In the turbopropeller sector, BAe has also had lengthy discussions with the Franco-Italian ATR consortium.

Rationalisation has also been intensified in BAe's space and missiles businesses. The UK company has agreed to sell its space systems division to Matra-Maroni, a joint venture between the French Matra company and the UK General Electric Company. BAe has also been negotiating with Matra to merge their respec-



tive guided weapons activities. BAe's core defence aerospace operations continue to be the company's main profit centre,

European comparisons of turnover



on the back of the group's lucrative relationship with Saudi Arabia and the strong export performance of its Hawk fighter-trainer aircraft. BAe also expects its 20 per cent stake in the European Airbus civil aircraft consortium to reap long-term dividends.

But for BAe much will hinge in the future on the controversial Eurofighter 2000 programme, as well as on the company's involvement in the Future Large Aircraft (FLA) project, a European collaborative venture to build a new military transport aircraft. The UK has maintained its strong commitment to Eurofighter, although the programme for the new advanced fighter has been dogged by controversy in Germany.

While there is broad consensus in the UK over Eurofighter, the FLA project has created deep divisions both within the government and the industry. The issue centres on whether Britain should buy the new US Lockheed Hercules C-130J or the European FLA to replace the Royal Air Force's ageing transport fleet.

The Lockheed camp has argued that its aircraft will be ready to meet the RAF's needs by 1996, while the FLA still faces uncertain development costs and will not be available until the next century. Lockheed has also said that UK participation in the programme will be worth £2.2bn and secure 3,500 jobs in Britain.

But BAe and its supporters have warned that the stakes are high, and that the consequences would be dire if the UK did not participate in the European FLA project. BAe has warned that its lead in wing design and production in Europe might be lost to Germany and France if it did not participate in the FLA programme.

There could also be serious implications over BAe's role in Airbus, since the FLA could be built by the European civil aircraft consortium, extending its activities into the military sector. In the UK aero-engine industry, the big challenge for Rolls-Royce is the development of its high-thrust Trent family of engines to power the new generation of large widebody airliners, which are expected to account for an increasingly large share of the total aircraft market during the next 20 years.

While the Trent programme has been a technical success, the problem for

Rolls-Royce is that it has had to continue investing heavily in the development of its new high-thrust engines at the same time as rationalising the company in the face of the industry's downturn and the increasingly tough competition from its two US rivals, General Electric and Pratt & Whitney.

Rationalisation has also been a main feature of the UK aerospace components sector. Lucas has been restructuring its US aerospace operations, while expanding through joint ventures in the fast growing Asia Pacific market. It has absorbed Dowty, which in turn has absorbed an Anglo-French aircraft landing gear joint venture with Messier Bugatti.

Overall, however, the UK aerospace industry warns that rationalisation, greater international collaboration and significant productivity improvements cannot alone guarantee the sector's long-term future.

Unless the government is prepared to match the support in R&D in new aerospace technologies and materials given by other countries to their industries, as well as more active export backing, there is a growing danger that the UK may see its position as a leading global aerospace participant severely undermined.

As the SBAC put it to the House of Commons select committee: "Failure to sustain adequate R&D investment to counter international competition could mean an inevitable erosion of UK capability - and once lost, the industry's leading position could not be regained."

The French aerospace industry, which has been hit by falling orders during the past three years, hopes that by 1995-96 turnover will begin to improve.

Some comfort was provided by Taiwan's 1993 order for 60 of Dassault's Mirage jets and 1,500 of Matra's Mica missiles. But, in general terms, the Taiwan contract provided only momentary relief, with new aerospace orders booked last year amounting to only FF90bn, 19 per cent down on the Taiwan-inflated figure of 1992 though only 4 per cent down on the 1991 level of new orders.

Turnover fell last year by 8.5 per cent to FF110bn, (\$21bn) with the brunt felt in the aero-engine sector (down 12.5 per cent) and by aircraft and missile makers (down 9.6 per

cent), while avionics and equipment manufacturers escaped relatively lightly (down 4.2 per cent). Almost all companies are cutting back their work forces, or, as in the case of Airbus, putting them on short-time working. Serge Dassault, president of the group that bears his name and head of Gifas, the industry association, estimates French aerospace will have lost 15,000 jobs over 1992-95.

In profit until 1991, the French aerospace sector has, overall, been in the red since then. The biggest money losers are state-owned: Aérospatiale, which cut its 1993 loss to FF1.42bn (from FF2.38bn a year earlier) but has this year had to get a FF22bn capital injection from the government to help reduce its debt and fund promotion of its new

France: Taiwan's order for 60 Mirage jets provides momentary relief

Hopes for a break in the clouds

A340 series; Snecma, the aero-engine maker whose 1993 loss increased slightly compared with 1992 to FF760m on sharply lower turnover; and Thomson-CSF, the defence electronics specialist. The latter, in fact, made an operating profit of around FF1bn, which was wiped out by its unfortunate stake in Crédit Lyonnais that required it to assume losses and had debt provisions of FF3bn.

All three companies are slated for privatisation, but the sale of Aérospatiale and Snecma is some time off. By contrast, private sector companies, like Matra (part of the Lagardere group) and Dassault have fared better, partly because of Taiwan contracts.

Bernard Nicolas, Gifas' secretary-general, estimates that this year will see a similar 8.5 per cent decline in French aerospace turnover, but also a pick-up in export orders, especially for Airbus and perhaps through possible missile sales to Sweden and helicopter sales to the UK. But he feels the French government does not always act in the best interests of its defence industry. In particular, he is critical of the promise France gave China not to sell any more offensive weapons to Taiwan. While this may have opened the door to the Chinese market to French civil contractors, he says salesmen for companies involved in the Taiwan sale still cannot get visas to visit China.

The French aerospace industry, at least, benefits from the fact that France is virtually the only country in the west or east which, far from awarding itself a peace dividend on the end of the Cold War, has decided to maintain defence

spending in real terms. The government's military framework law for 1995-2000 sets a 0.5 per cent real increase in defence equipment spending for the first three years, and possibly more thereafter, depending on how the economy performs. And this starts from a 1994 base of FF100.4bn, which is higher than in the UK or Germany.

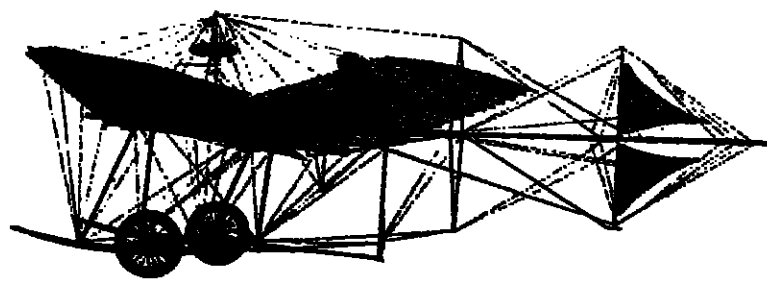
But Mr Nicolas notes that the Balladur government has resorted to a habit of the previous socialist government by "freezing" FF2.5bn of the 1994 equipment budget. The

Gifas director also complains that the civil aviation portion of the 1994 budget only includes money for "reimbursable advances" for existing programmes, not for new ones planned by Aérospatiale and Dassault. France, however, remains a firm believer in this "transparent" form of direct aerospace subsidy, and from the bogged-down talks with the US, it would like to see emerging an extension of the 1993 US-European Union agreement to cover not just airframes, but also aero engines and equipment.

Space accounts for about 15 per cent of French aerospace turnover, but its business fell last year by nearly 6 per cent. However, Matra-Maroni Space, the Anglo-French joint venture, has just boosted its capability by buying British

Aerospace's space business. Despite recurrent rumours of national mergers, of the kind that produced BAe or Deutsche Aerospace (Dasa), French companies have instead sought to cope with their industry's present crisis by reaching out to foreign partners. Aérospatiale is negotiating with Dasa to create in missiles the sort of joint venture they already have in helicopters; Thomson-CSF has recently capped its large number of joint ventures and acquisitions with the UK by announcing two joint ventures with Dasa on "smart" munitions and missile propulsion; and Matra is on the verge of completing its long negotiations for a joint venture with BAe on missiles.

David Buchan



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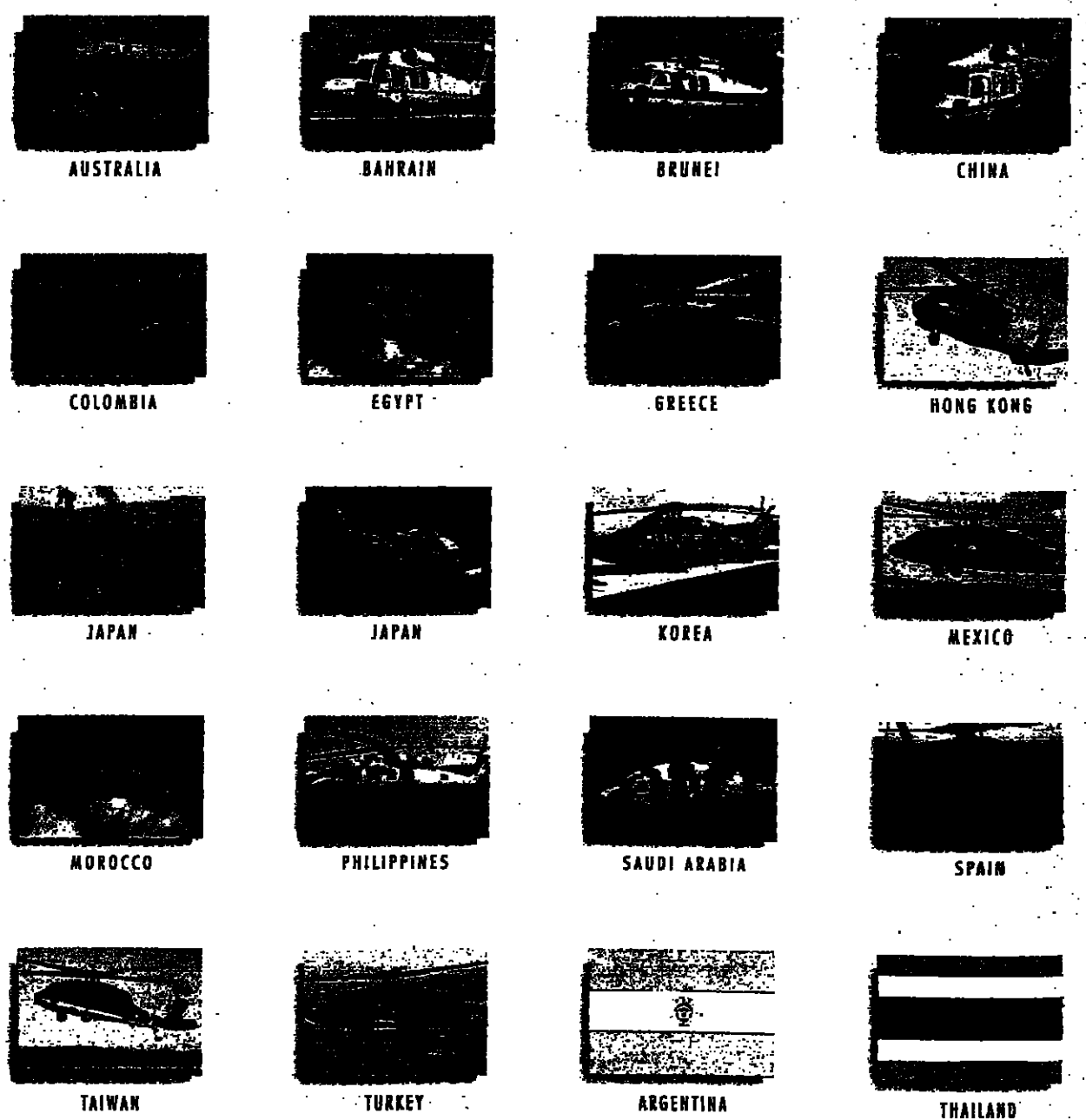
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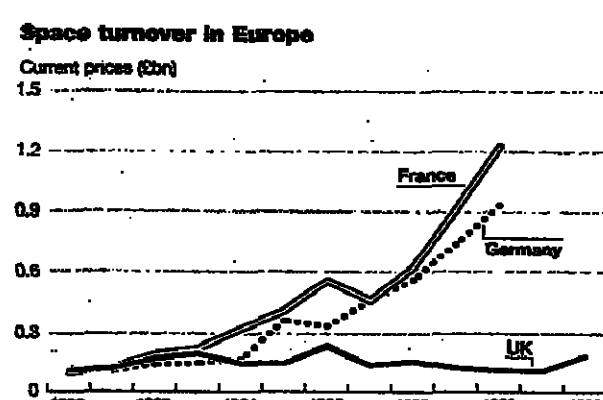
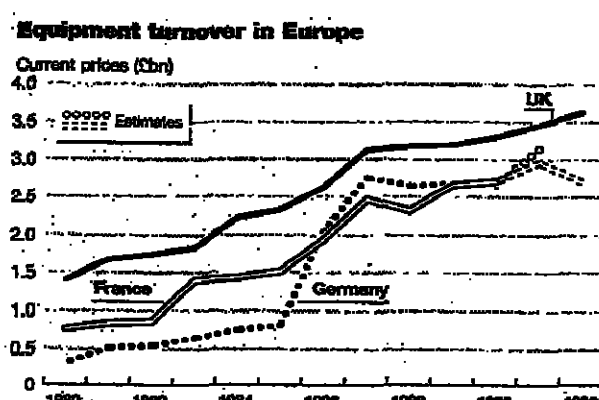
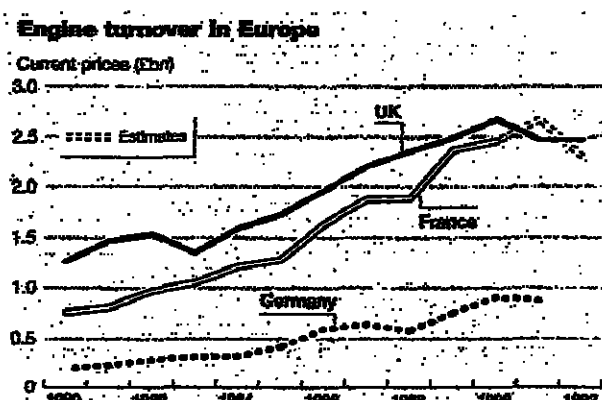
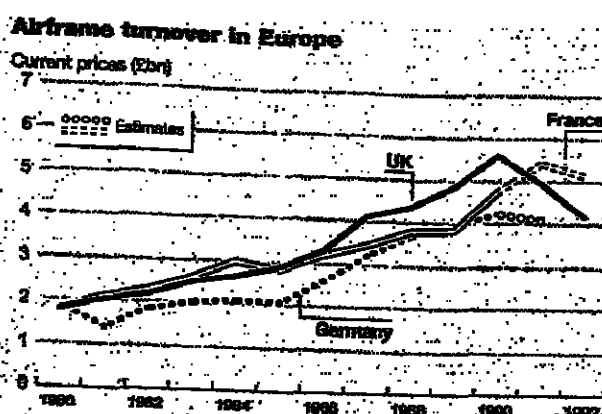


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Sweden: Hugh C... Partners

AEROSPACE 13



For an industry undergoing its most severe crisis since the 1960s, the appointment of Jürgen Schrempf as the new chief executive of Daimler-Benz amounts to a considerable vote of confidence.

He is the man who, as head of Deutsche Aerospace (Dasa), the dominant force in the German aerospace industry, has been responsible for the radical reorganisation of much of the sector into one of Daimler's most important subsidiaries. And now, in the past 18 months, he has been the man forced to embark on sweeping and painful cuts in that same operation to cope with the downturn, drawing up plans to close six plants and lay off 16,000 workers.

The truth is that the success or failure of Mr Schrempf's overhaul is still in the balance, but Daimler, Germany's mightiest industrial empire, has clearly decided that the job has been well done. Dasa, which includes Deutsche Aerospace Airbus, the German part of the Airbus Industrie consortium, and a half share in the Eurocopter consortium, as well as famous names such as Messerschmitt-Bölkow-Blohm (MBB), the country's main military aircraft contractor, a majority stake in Dornier, a manufacturer of medium-range turboprop aircraft, and the Dutch company, and the Eurocopter consortium, will remain an essential part of the empire and its boss, Mr Schrempf, will succeed Edoard Reuter next year at its helm.

The decision of the Daimler-Benz supervisory board in June coincided with the successful conclusion of Mr Schrempf's negotiations with the trade unions at Dasa to close six of its 16 plants, and cut 10,300 of the 16,000 jobs it needs to shed by 1996. The last year has been traumatic for Dasa, as it has been for the rest of the aerospace sector.

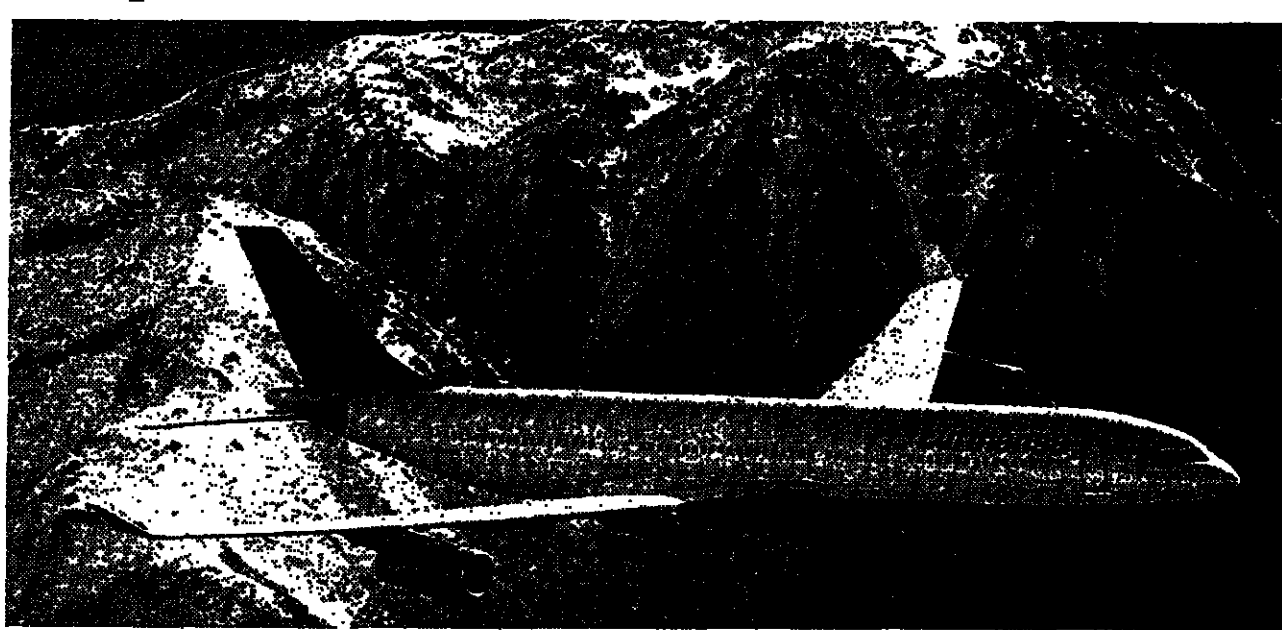
Overall employment in the sector stood at 78,500 on December 31, 1992, and fewer than 72,000 by the end of last year. At least 10 per cent more jobs will have been shed by the end of the present year, according to the calculations of the BDLI, the German aerospace and defence industry federation. The sharpest cuts have been in the military sector - down 13.8 per cent in 1993 - and in the space sector, down 10.2 per cent in the year.

As for turnover in the industry, according to the BDLI figures, it was down even more sharply, by 18 per cent from DM26.77bn to DM21.95bn in 1992 alone.

The sector was hit, like the industry worldwide, by the coincidence of a sharp recession in civil aviation and drastic cuts in defence spending, as governments sought to reap the dividends of the end of the cold war. It has galvanised a traditionally conservative and somewhat self-satisfied industry in Germany into urgent public lobbying to protect its position, on the grounds that the country could lose its access to a vast area of vital high technology if it allows the aerospace sector to be marginalised once again, as it was after the second world war.

Germany: Quentin Peel discusses positive moves to revive the industry

Important vote of confidence



German manufacturers have been firm backers of Lufthansa's privatisation

alised once again, as it was after the second world war.

Mr Schrempf has been one of the most vigorous campaigners for more coherent and overt government support for the industry, alongside Wolfgang Piller, his fellow Dasa director and president of the BDLI. Above all, they have argued that European governments must be prepared to

back the industry with the same level of indirect support - through defence spending, and subsidies for research and development - as the US government does for its aerospace manufacturers.

The recent decision by the German government to back a DM1.2bn four-year research and development programme - to be half financed by the

industry - was described by Mr Piller as a "first step" in the right direction. But he pointed out that in the US, the NASA budget for aerospace security had increased from \$512m in 1991 to more than \$1bn in the current year, with a target of \$1.4bn by 1996.

Defence department spending on research and development in aerospace are estimated by the BDLI at around \$1.4-1.6bn per year. Hitherto, the comparable sums in Germany added up to just DM18m a year.

Speaking at the Wehrkunde security conference in Munich this year, Mr Schrempf issued an urgent plea for fairer and more open competition between Europe and the US in armaments and aerospace industries. "We do not need a

préférence Européenne, which would eventually cut us off from developments in top-notch technology outside Europe," he argued. "What we need is a level playing field with our US competitors."

This meant, he argued, overcoming the national fragmentation of the European markets in defence and civil aerospace manufacture. And his whole strategy at Dasa has clearly been focused on that aim.

In each sector, he has actively promoted cross-border co-operation. Not just in the Airbus consortium, but also in Eurocopter, the Franco-German joint venture set to start deliveries of its seven-seater, twin-engine light helicopter, the EC135, in 1996. He has pushed through the takeover of Fokker, the proudly independent Dutch aircraft manufacturer, to rationalise production in the turboprop sector, and is now talking of possible collaboration in satellites and guided missiles, with France's Aérospatiale.

In spite of the painful and costly experience of the Eurofighter project - still on track in spite of the German government's prevarication - Mr Schrempf is a vigorous supporter of the plan for a joint European project for the next generation of military transport aircraft, the so-called Future Large Aircraft (FLA).

He has used the industrial muscle of Daimler-Benz to force the German aerospace industry to match its competitors in Britain and France.

Thus within the Airbus consortium, he fought strenuously

to raise the German profile, succeeding in winning the contract for final assembly of the most recent A321 Airbus model for his own Hamburg plant. Previously all Airbus aircraft were assembled at Toulouse.

The importance of the move for the German industry was underlined by the economy in January, when Lufthansa, the national carrier, became the first airline to take delivery of an A321. German manufacturers have been firm backers of Lufthansa's privatisation, on the grounds that a strong and profitable national airline is a vital underpinning for a strong national aerospace industry.

However, Mr Schrempf's strategy at Dasa has also underlined his perception of the limitations of the European industry. He has pushed through the alliance between MTU and the US aero-engine giant Pratt & Whitney, in an effort to compete with the BMW-Rolls-Royce alliance. He was a prime mover behind the decision to open talks between Airbus and Boeing on joint development of the next generation of super jumbos. And he has also brought about an alliance in a key market, by setting up a joint venture in satellite and space systems manufacture with China.

So far, none of that frantic activity has shown up in the bottom line. Dasa suffered a record net loss of DM694m in 1992, more than double that of the previous year. It will still be in the red in the current year. But Mr Schrempf is adamant that it will be back in the black by 1995.

Times are hard in Italian aerospace. Employment figures at Alenia, the state-controlled business that dominates the national industry, illustrate the severity of the recession over the past four years.

When Aeritalia, with its predominantly aero activities, merged with Selenia (mainly electronics and defence) to form Alenia at the end of 1990, the aggregate workforce was just over 30,000. Alenia now has 26,000 on its books, of whom 3,000 are currently drawing benefits from the cassa integrazione guadagni labour lay-off fund and will never return to the drawing offices and production lines.

"I hope that we have seen the end of traumatic changes and that the 23,000 effective workforce is the floor," says Fausto Cereti, Alenia's head. However, he recognises the continued and continuing downward trend in jobs. "Clearly, productivity is more likely to rise than fall. Competitors do not stand still, and the industry throughout the world is reducing its workforce."

"We are adapting our organi-

sation and programmes to the enormous changes that the market is undergoing, both in terms of customers' spending levels and the entry of new suppliers," explains Mr Cereti.

He notes that Alenia has been suffering from a recession that has hit civil and defence activities simultaneously. "The crisis in civil aviation and the drop in aircraft orders has not been counter-balanced by an increase in defence budgets. People have wanted the peace dividend since the fall of the Berlin Wall," says Alenia's head. He does not foresee increased defence spending. "Improvements on the defence side will come from reductions in production capacity."

Yet in February this year, Alenia's Finmeccanica parent, a sub-holding of the IRI state holding corporation, completed the acquisition of the defence interests belonging to the bankrupt EFIM state holding corporation. With Agusta helicopters, Agusta Omi, Oto Melara Offshore Galileo and Breda Meccanica Bresciana now inescapably part of Finmeccanica, scope for further rationalisation seems greater.

Italy: David Lane examines the consequences of recession

Alenia slims its workforce

However, the outlook is not completely black. "The civil market is giving signs of upturn. The situation is far from brilliant, but it is better than two years ago," observes Mr Cereti. He believes that Alenia should start to see a healthier flow of orders around the beginning of next year.

Much is still expected from its successful ATR joint venture with France's Aérospatiale. Firm orders for the ATR 42 and ATR 72 regional commuter aircraft stood at 422 at the end of last year, and further sales have since been achieved. "The programme is going very well and is doing better than break even. The ATR 42 is being quietened by installing a six-bladed propeller, and we are considering completing the range with a cargo/military version and an 82-seater," says Mr Cereti. Alenia's head executive says



Fausto Cereti does not foresee increased defence spending

that ATR would welcome new partners. "Italians would rather dine in the company of 10 than three. It is more congenial," remarks Mr Cereti. He adds that ATR is sounding out other aerospace companies, and that British Aerospace

would closely fit the identikit of an ideal partner.

Although Alenia puts the spotlight on the ATR programme, mundane business counts for more in money terms. The elderly G22 transporter and maintenance work provided 14 per cent of aerospace revenues last year, against the ATR's 7 per cent. Manufacture of aircraft components for Boeing, MDD and Airbus also contributed more to the accounts, with 9 per cent of total aerospace revenues.

Co-operation with other makers is a characteristic of the Italian state concern. It is anomalous therefore that its role in Airbus is relatively small, recent and not risk-sharing.

This is unlikely to change soon. "Airbus has difficulties in filling the capacity of its partners. But perhaps there will be space for Alenia in a

new Airbus programme," says Mr Cereti.

Yet the ATR programme, the G22 transporter, aircraft maintenance and the manufacture of components together only contribute the same level of revenues as military aircraft alone. This sector is the biggest contributor to Alenia's aerospace revenues, with 30 per cent of the total. The business overall is highly dependent on the AMX light tactical fighter, the Tornado, the F104 upgrade and, most critical, the Eurofighter.

Alenia is pinning its hopes on EFA, as Mr Cereti makes clear. About 15,000 workers will be employed on the programme when it is under way. He warns that EFA production must commence next year in order that design, development and manufacturing capability shall not be put at risk. Alenia has an urgent need for orders to absorb capacity.

"It is not possible to close facilities and then re-open them when EFA is ready. But there is willingness to pay the costs of maintaining idle plants," asks Mr Cereti. Moreover, if or when EFA

does enter production, Italy's state aerospace business will be working to a much smaller order book than it expected when the project started. "EFA numbers will be fewer than were initially foreseen. Italy planned to take 180, and this was a minimum. There were expectations of further purchases. Now Italy says it will take 130, and this is the minimum," says Mr Cereti, anticipating further cuts.

What these critical times have done to Alenia's profit and loss account is unclear. Its last accounts were for 1991, when it reported 1,580m (223m) post-tax profit on sales of 14,512bn. It has since been merged into its Finmeccanica parent, which has not disclosed figures for Alenia. With the consolidated profit and loss account of stock market-quoted Finmeccanica crashing from 1,180bn on sales of 1,11,791bn in 1992 to just 1,330bn on sales of 1,10,772bn last year, its aerospace activities were probably heavily in deficit. Indeed, Mr Cereti acknowledges that conditions were much better three or four years ago.

Sweden: Hugh Carnegie on recovery from the Gripen crash

Partners hope for exports

The frightening spectacle last August of Sweden's new JAS 39 Gripen fighter aircraft veering crazily out of control over thousands of spectators and crashing pitilessly in Stockholm's inner suburbs could hardly have come at a worse time for its manufacturers. The aeroplane that crashed was number 39.102, the first to be delivered to the Swedish Air Force after a full year's delay and heavy cost overruns in the development schedule of the fighter. With the vital first export order still unsecured, the crash appeared to be a disastrous setback for the four Swedish partners making the JAS - Saab-Scania, Volvo Flygmotor, Ericsson Radar Electronics and FFV Aerotech, part of the Celsius group.

A year later, however, the consortium believes it has largely put the effects of the crash behind it. The export breakthrough has still not occurred, but the JAS makers insist its credentials as a high performance, but relatively low-cost all-purpose fighter can capture a large chunk of the market for new combat aircraft over the next six years.

An official investigation into the JAS crash - during which the pilot ejected safely and, miraculously, no one on the ground was hurt - concluded that it was caused by "insufficient margins in the flight control system software" that led to "a conflict between the pilot's commands and flight control system signals". In

other words, the aircraft did not do what the pilot told it to do.

The consortium introduced a new edition of the flight control system software, and test flights were resumed last December. At the beginning of this year, a parliamentary commission set up to examine the JAS project gave it the green light to proceed.

Hans Ahlinder, general manager of Saab Military Aircraft, says those within the industry in Sweden and abroad accept that the problems have been ironed out, and that there should be no significant sales fall-out from the crash. "Everybody has some crashes during aircraft development. There is no bad will for the JAS 39," he insists.

The crash did add some SKr100m to the cost of development. But this was not a large amount in the context of the SKr60.2bn (25m) cost of developing and producing the first batch of 30 of the JAS, of which the consortium bore almost two thirds and the rest was borne by the state.

The Swedish Air Force ordered a further 110 aircraft in 1992, in a deal worth SKr185bn. The air force is being extensively restructured and slimmed to 16 squadrons, but all these are to be equipped with the JAS 39, giving the consortium the prospect of another 150 domestic orders.

But for the consortium - especially Saab-Scania, easily the biggest partner - the key

to a significant payback from the JAS project lies in the export market. Here the ambitious target is to capture up to 500 overseas sales by the end of the century. Just how ambitious this is can be gauged from the consortium's own projections, which show original estimates of 3,000 worldwide combat aircraft replacements by the year 2000 falling to as low as 1,500.

Mr Ahlinder believes the 500 target remains realistic. He says the JAS 39 occupies a niche which will make it attractive to air forces looking for a combination of performance and economy.

The JAS 39 is designed to be fully qualified for attack, fighter and reconnaissance missions, and is intended to be cheap to run and service. It is priced below the other new generation fighters now under development - the Eurofighter (a joint German, British, Spanish and Italian project), the French Rafale and the American F22.

But, as Saab-Scania acknowledged in its latest annual report, it will also have to compete with upgraded versions of older aircraft such as the F16 and F18, the French Mirage 2000-5 and the Russian Mig29 and Su27.

To strengthen the vital export push, the consortium has been in talks with British Aerospace for two years, seeking a deal to use BAE's worldwide marketing and product support network to help sell

the JAS. From BAE's point of view, the JAS would provide it with a new product to fill the gap before the Eurofighter is in production. A decision on whether to proceed will be taken by the year's end, according to Mr Ahlinder. Meanwhile, similar talks with other manufacturers have also been held, he says.

For Saab-Scania, these are also anxious times for its civilian aircraft division as it confronts a weak market. The company has carved out a significant share of the regional aircraft market, winning a near 40 per cent share of the world market for 30-39 seat airliners with its 35-seater Saab 340 aircraft. This year it has completed certification in the European Union and the US of its new 50-58 seater Saab 2000, and is due to make its first five deliveries of the new airplane - to Switzerland's Crossair.

But last year, deliveries of the 340 fell to 28 from 49 in 1992, and its share of worldwide deliveries in its segment fell from 49 to 36 per cent. This year deliveries of both the 340 and 2000 are not expected to exceed 20 - a long way below the target of a break-even level of 50 sales a year.

Saab-Scania, however, is committed to the long term in the industry, believing that when the cycle turns, regional airliners will be "one of the most expansive segments in the aircraft industry". It is convinced the 340 and 2000 are "in pace with the times".

THE NETHERLANDS

Breathing space for Fokker

The company believes that demand will pick up in 1996 and that total sales in its segment of the market will reach 2,000 in the next 10 years

Fokker, the Dutch aircraft manufacturer, recently secured some financial breathing space as it awaits the recovery on the international aviation market which it predicts will emerge in 1996.

In July, Deutsche Aerospace (DASA), the company's German controlling shareholder, agreed to inject some F1 600m (\$345m) into Fokker to shore up its balance sheet.

The Dutch government, which owns a minority stake in Fokker, did not participate directly in the refinancing, but it did approve a F1 400m "sale-and-lease-back" of the company's technology to Rabobank, the big Dutch co-operative bank.

In all, the F1 1bn will boost shareholders' equity from just 11 per cent of Fokker's balance sheet to 27 per cent, enabling the company to cope with the malaise that continues to affect the industry.

Fokker believes that demand for new aircraft will pick up in 1996 and that total sales of aircraft in its segment of the market will reach 2,000 over the next 10 years.

Meanwhile, Fokker, like other international aircraft makers, has been hit by sluggish demand, fierce price competition and the need to shed employees and reduce output while the market's weakness continues.

In 1993, these problems sent Fokker into a record net loss of F1 460m from a slim profit of F1 20m the year before. And

turnover dropped to F1 3.7bn from F1 4.1bn.

Much of the red ink was caused by a provision of F1 275m taken to cover the cost of selling aircraft at reduced prices to cut its stock.

Since then, it has introduced a new policy of completing the assembly of only those aircraft that have been firmly ordered. The move is part of a wider project to enhance production efficiency and flexibility at the company's plant near Amsterdam Schiphol Airport.

Fokker also took a charge of F1 90m to finance a further round of job cuts in the first half of 1994.

The company's workforce has fallen to below 10,000 from more than 13,000 at the beginning of the 1990s.

The trend towards increased leasing, rather than outright sales, of aircraft has also strained Fokker's balance sheet.

This partly reflects the lack of down payments that used to accompany a firm order for the purchase of an aircraft.

To meet the challenge of leasing, Fokker hopes to set up a separate leasing company at arm's length from the company but with the participation of DASA and a couple of

banks. The Dutch government, which is due to sell its remaining Fokker shares in less than three years' time, has already said that it will not be a shareholder of the leasing company.

The July refinancing of Fokker, which must still be approved by DASA's parent, the Daimler-Benz group, is one of the most significant fruits so far of the April 1993 deal which brought the Dutch company under German control.

The deal, though controversial at the time in the Netherlands, was the result of the Dutch government's repeated assertion that it could no longer afford to finance Fokker's future and that the company needed to find itself a strong industrial partner.

Since then, another important change at the company has been the arrival of a new chairman, Ben van Schaik, a former executive in Mercedes-Benz's commercial vehicles business, to replace Erik-Jan Nederkoorn, the original architect of the German takeover who later became embroiled in a damaging boardroom row.

At the same time, Fokker pressed ahead with the formal

launch of its latest aircraft, the 79-seat Fokker 70, which joins its two existing aeroplanes, the Fokker 50 and the Fokker 100.

Given the uncertain conditions prevailing on the aviation market, however, no decision has yet been taken on Fokker's long-standing wish to develop a 130-seater Fokker 130.

The certification process for the new Fokker 70 is under way.

In July, the first series-produced aircraft had its maiden flight and then joined the test programme that had already begun with the prototype aircraft.

The first delivery of a Fokker 70 to launch customer, Sempati Air of Indonesia, is expected in early 1995. Other orders have also been received from airlines in the US and Europe.

The Fokker 70 is based largely on the Fokker 100, and the two aircraft are being built on the same assembly line using tooling equipment and working areas that make such mixed production possible.

This configuration is designed to increase flexibility. Indeed, in the second half of next year Fokker's customers ordering either the Fokker 70 or Fokker 100 can decide which of the two aeroplanes they want until 12 months before delivery.

Ronald van de Krol

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The past few years have been tough ones for the aerospace industry. The commercial market has been languishing, with airlines forced to cut back on aircraft deliveries due to lower-than-anticipated passenger growth. The end of the cold war has led to wholesale cuts in defence expenditure – and in the purchase of military aircraft.

The bright spot among the gloom has been the Asia Pacific region. Aerospace executives realised long ago that the region was the area of growth: according to latest forecasts by Boeing, Asian airlines are expected to acquire up to 3,000 aircraft, valued at \$245bn, between now and 2010. It is expected that, by the end of the century, Asia will surpass the US as the world's largest commercial jet market.

At the same time, many countries in the region – particularly in south-east Asia – are strengthening their defence forces and making big expenditures on military aircraft. "This region is the salvation of our industry," said a Singapore-based aerospace execu-

tive. "If an aerospace company is not selling into this region, then its future has to be bleak."

Countries in the region have realised that their increased purchasing power has given them considerable influence over the world's aerospace companies. Many countries have ambitions to develop their own aerospace industries. Purchases – whether of commercial or military aircraft – are linked increasingly to technology transfer and so-called "offset" arrangements, which guarantee that purchasing countries can participate in various stages of aircraft manufacture.

A recent report by the US general accounting office, carried out for the Congressional committee on science, space and technology, found that, though countries in Asia are likely to be dependent on western aeronautics technology for some years, the region is developing a strong industry which could pose future problems for US manufacturers such as Boeing and McDonnell Douglas.

"Once acquired, these tech-

nologies can be honed and improved upon," says the report. "Consequently, what starts as a subcontract to produce latches on cargo doors, for instance, develops over time to fuselage, wing and avionics manufacturing."

Indonesia's Pesawat Terbang Nusantara (IPTN) is the only company in south-east Asia at present producing its own aircraft. It already manufactures the CN235 transport aircraft in co-operation with Casa of Spain. Later this year, the 70-seat CN235 is due to be rolled out of IPTN's giant complex at Bandung, on Java. The CN235 will be the first commercial aircraft to be designed and built entirely in Indonesia.

The Indonesian economy is rapidly expanding. The country, the world's third most populous, stretching across an area wider than the US coast

to coast, has a growing appetite for aircraft.

Mr Bacharuddin Habibie, Indonesia's minister of research and technology and the driving force behind the growth of IPTN, is known in the aerospace industry as "Mr Offset". Mr Habibie, who has many critics, both within and outside Indonesia, for the way he has poured millions into high-technology projects, has established a wide range of collaborative agreements with foreign companies, and is demanding increasing amounts of technology transfer. He is also determined to take on the western companies.

"I have tried to sell IPTN aircraft in the US," says Mr Habibie. "The US says it's an open market, but it has so many built-in regulations that I can never sell an aircraft there. This is why I have to set up a

company in the US to produce, assemble and sell our aircraft there."

Both Malaysia and Thailand are rapidly upgrading their aerospace industries. Increasing amounts of commercial aircraft repair and maintenance can now be carried out in either Bangkok or Kuala Lumpur. Again, both countries have insisted that, if they are going to buy commercial and military aircraft, aerospace companies must, in return, establish local training and manufacturing centres.

Recently McDonnell Douglas entered into a wide-ranging agreement to help Malaysia develop its aerospace industry. Last year, Malaysia placed orders for eight F/A-18D fighter jets from the US company, as part of its modernisation programme.

Malaysia has also reached collaborative manufacturing, maintenance and technology-transfer agreements with the Russians as a result of purchasing 15 MiG-29s.

Dr Mahatir Mohamad, Malaysia's prime minister, has been stressing the need to develop an aerospace industry. Malaysia plans to manufacture initially two small two-seater aircraft and a 14-seater amphibious aircraft. "These are undoubtedly small beginnings," says Dr Mahatir, "but in a century's time we may have our Boeing and McDonnell Douglas counterparts."

A beginning has to be made. Singapore was the first country in south-east Asia to develop an aerospace industry. More than 50 companies are involved in what is now a highly sophisticated aerospace sector. According to the gov-

ernment's economic development board (EDB), the aerospace industry grew by 6.2 per cent last year with a total output of \$41.25m (\$800m).

The facilities provided at Changi – consistently rated as one of the world's most efficient airports – plus the availability of a highly skilled workforce – have been essential elements in making Singapore into one of the key aircraft overhaul and maintenance centres in the Asia Pacific region.

While Singapore does not have ambitions to produce its own aircraft, it has achieved some notable manufacturing successes. For example, Airbus A320 cabin doors, A340 engine mounts and landing-gear doors for the new Boeing 777 are now manufactured on the island.

However, Singapore faces constraints on manpower and space. Many airlines and aerospace companies locating regional operations in Indonesia, Malaysia or China, where wages are considerably lower.

Moreover, competition does not come only from the region. "European companies are very, very hungry and are slashing

prices to rock-bottom," says an executive at one of Singapore's biggest aerospace companies. "At the end of the day, it will be a case of who can give the best in price, turnaround time and quality."

Singapore's industrial planners have a dual response to the challenges their aerospace industry faces. One way to combat the competition is to go into increasingly sophisticated high-tech areas of the industry. The other is to go regional – forming joint ventures with other countries and companies, particularly in labour-intensive areas.

Such ventures have already been formed in India. Late last year, Singapore Engineering, the wholly-owned subsidiary of Singapore Airlines, took a 10 per cent stake in a \$63m aircraft repair and maintenance facility in China. Not only does this give the Singapore company the advantage of being able to recruit workers at less than two thirds the rates in the island republic; it will also give Singapore important access to the world's fastest growing aerospace market.

Asia Pacific is a bright spot for the industry, writes Kieran Cooke

Indonesia points the way

Kieran Cooke on the implications of Asia Pacific's surge in air travel

A test for control systems

In June, Singapore Airlines (SIA) announced one of the world's biggest aircraft orders. The national carrier would buy 22 Boeing 747-400 Megatops and 30 Airbus A340-300E aircraft, with a total price-tag of \$10.3bn.

SIA said the aircraft were needed because of expected passenger growth of between 8 and 10 per cent a year in the coming decade. Mr Cheong Cheong Kong, SIA's managing director, described the order as "an expression of our faith in the long-term health of the aviation industry and the promising future of SIA."

Airlines throughout the Asia Pacific region are expanding to meet surging passenger demand. The International Air Transport Association (Iata) predicts that passenger numbers in the region will double between now and 2000.

While passenger traffic is growing by 5 per cent a year in North America and under 4 per cent a year in Europe, in Asia the figure is closer to 9 per cent. Asian markets now

account for about 25 per cent of world air travel. By early next century that figure is likely to exceed 40 per cent.

Several factors have caused the upsurge. The main stimulus has been the economic growth of most countries in the area. China's economy has been expanding by more than 12 per cent a year. Singapore's grew by nearly 10 per cent last year. The economies of Malaysia and Thailand have expanded by more than 8 per cent in each of the last five years.

Economic growth means more business activity and more business travel. It also means rising income levels, with people having greater opportunity to travel. In China alone air traffic increased by 35 per cent in 1992, and by more than 20 per cent last year.

Another factor influencing traffic levels has been the lifting of various travel restrictions in many countries: citizens of Taiwan, South Korea and perhaps most significantly China no longer face severe curtailments on movement out-

side their countries. Business people travelling in the region face fewer immigration barriers. Intra-Asia tourism is now one of the region's key growth industries.

Vietnam Airlines, the state carrier, reports that it carried 320,000 foreign passengers during the first six months of this year – more than the total carried in 1992.

Most of the region's carriers have ambitious expansion programmes. However, they have not been immune to the problems that have faced airlines elsewhere. Hong Kong-based Cathay Pacific reported a 24 per cent drop in net earnings last year. Malaysia Airlines' pre-tax profits for the year to March 1994 fell by 90 per cent. Over the same period, pre-tax profits at Singapore Airlines, consistently one of the world's most profitable carriers, dipped 7.7 per cent to \$555m.

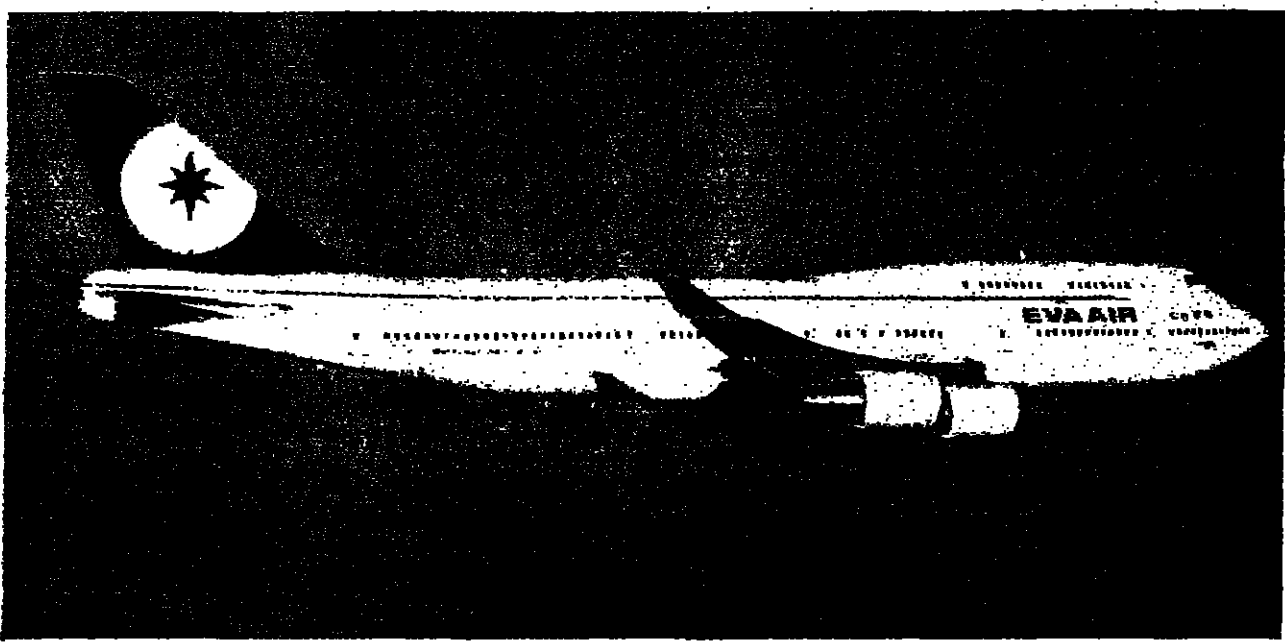
The profits slump was blamed on a combination of recession in western markets, plus intense competition and adverse currency factors. Many

carriers now realise that their passenger forecasts and consequent expansion plans of a few years ago were too optimistic.

Officials at Malaysia Airlines privately admit that a \$10.8bn aircraft purchase programme, which started in the early 1990s, has put severe financial strain on the company. Malaysia Airlines, Thai Airways, Philippine Airlines and Garuda, Indonesia's national carrier, have all had to defer or cancel some aircraft deliveries.

Asia's carriers have met increasing competition from outside the region. Faced with tough conditions at home, carriers from the US, and to a lesser extent from Europe, have turned to the lucrative Asia market. Asia's big state-controlled carriers have also been hurt by competition from the region's new airlines, such as Eva in Taiwan and Asiana in South Korea.

In partial response to the growth in competition, the region's larger carriers have improved levels of service and introduced frequent flyer pro-



Flying high: competition from Asia's new airlines, such as Eva Air, have hit state-controlled carriers

Picture: Sky News

grammes. Passengers who have long complained that Asia has some of the most expensive air routes in the world are relieved to find carriers undercutting ticket costs.

Other problems haunt the Asia Pacific's carriers. Thomas S. Windmiller, assistant director of the Air Transport Action Group, believes the region's

airline industry is in danger of "strangling on its own success". Mr Windmiller says that forecasts for passenger growth in the region are based on the assumption that there will be sufficient airspace systems and airports capable of handling the upsurge in traffic.

However, there is an urgent need for Asia Pacific govern-

ments to standardise aerospace regulations and co-ordinate traffic-control systems. Once in the air, the passenger may be able to sit back and enjoy the service for which Asia's airlines are known. But facilities in the air are not matched by infrastructure on the ground.

Iata says only two of the main air-traffic hubs in the

region – Singapore and Taipei – are capable of coping with expected passenger growth. Many countries in the region are either expanding existing airport facilities or building entirely new ones. However, until these are opened there is likely to be more congestion – and more frustration among passengers.



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